

L Number	Hits	Search Text	DB	Time stamp
1	668	(426/637).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 15:22
3	47	((426/637).CCLS.) and potato adj chip and water and (friability or fines)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 15:23
4	1	((426/637).CCLS.) and potato adj chip and water near (friability or fines)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 15:24
2	166	((426/637).CCLS.) and chip and water	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 15:27
-	636	(426/455,456,457).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 15:21
-	1851	(426/506-511).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/25 14:00
-	114	((426/506-511).CCLS.) and (ready?to?eat?cereal or nut or potato?chip or freeze?dried)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/09/25 14:01
-	5322	(426/302,305,310,455-457,506-511,618-620).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 12:32
-	25	((426/302,305,310,455-457,506-511,618-620).CCLS.) and bowl adj life	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 10:27
-	8	((426/302,305,310,455-457,506-511,618-620).CCLS.) and cereal and friability	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 10:28
-	179	((426/302,305,310,455-457,506-511,618-620).CCLS.) and (hydrated or hydration) and (dried or drying) and cereal	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 10:30
-	1742	(426/302,305,310).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 12:21
-	921	((426/302,305,310).CCLS.) and water	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 13:45

-	541	((426/302,305,310).CCLS.) and water same (misting or spraying or coating or soaking)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 12:30
-	3	((426/302,305,310).CCLS.) and water same (misting or spraying or coating or soaking)) and case adj hardening	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 12:30
-	5322	(426/302,305,310,455-457,506-511,618-620).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 13:10
-	26	((426/302,305,310,455-457,506-511,618-620).CCLS.) and case adj hardening	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 12:41
-	5322	(426/302,305,310,455-457,506-511,618-620).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 12:42
-	1602	(426/302,305,310,455-457,506-511,618-620).CCLS.	USOCR	2004/05/13 12:43
-	280	((426/302,305,310,455-457,506-511,618-620).CCLS.) and cereal	USOCR	2004/05/13 12:43
-	131	((426/302,305,310,455-457,506-511,618-620).CCLS.) and (tempering or sparging or equilibrat???) and cereal	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 13:11
-	182	((426/302,305,310).CCLS.) and vitamins	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 13:56
-	1134	(426/302).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 13:57
-	167	((426/302).CCLS.) and water and cereal	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/05/13 13:57

	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
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FULL ESTIMATED COST	0.06	0.27

FILE 'HOME' ENTERED AT 11:21:25 ON 13 MAY 2004

=> file fsta		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
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FULL ESTIMATED COST	0.21	0.48

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FILE LAST UPDATED: 10 MAY 2004 <20040510/UP>
 FILE COVERS 1969 TO DATE.

>>> THE NEW 2003 EDITION OF THE FSTA THESAURUS IS AVAILABLE NOW <<<

=> s cereal and bowl(w)life
 23582 CEREAL
 608 BOWL
 21793 LIFE
 15 BOWL(W)LIFE
 L1 14 CEREAL AND BOWL(W)LIFE

=> d l1 all 1-14

L1 ANSWER 1 OF 14 FSTA COPYRIGHT 2004 IFIS on STN
 AN 2004:M0588 FSTA
 TI Good things even better.
 AU Bollinger, H.
 CS J. Rettenmaier & Soehne, Rosenberg, Germany. E-mail
 Hartmut.Bollinger(a)jrs.de
 SO Lebensmitteltechnik, (2003), 35 (6) 40-42, 2 ref.
 ISSN: 0047-4290
 DT Journal
 LA German
 AB Utilization of different fibre sources for the manufacture of breakfast
 cereals was investigated. Wheat bran, oat fibre (Vitacel) or a mixture of
 Vitacel + inulin (Raftiline) were added to a basic **cereal** mix
 containing 3.7% fibre in order to provide a total dietary fibre content of
 approx. 6%. Samples were extruded and extrudates examined for abrasion
 effects, surface characteristics, crispness, flavour, colour and
 bowl life compared with control (no added fibre).
 Results showed that the different fibre types could be used to produce
 fibre-enriched **cereal** extrudates with similar sensory properties
 to the control, and that oat fibre, alone or with inulin, was a good
 alternative fibre source to traditional wheat bran. Addition of oat fibre
 also improved processability of the **cereal** mix.
 CC M (Cereals and Bakery Products)
 CT BRAN; **CEREAL PRODUCTS**; EXTRUSION; FAT SUBSTITUTES; FIBRE; OATS;
 SENSORY PROPERTIES; WHEAT; BREAKFAST CEREALS; EXTRUDATES; OAT FIBRE;

=> s cereal and hydration
23582 CEREAL
1597 HYDRATION
L2 153 CEREAL AND HYDRATION

=> s l2 and dehydration
2945 DEHYDRATION
L3 2 L2 AND DEHYDRATION

=> d l3 all 1-2

=> d his

(FILE 'HOME' ENTERED AT 11:21:12 ON 13 MAY 2004)

FILE 'STNGUIDE' ENTERED AT 11:21:20 ON 13 MAY 2004

FILE 'HOME' ENTERED AT 11:21:25 ON 13 MAY 2004

FILE 'FSTA' ENTERED AT 11:21:35 ON 13 MAY 2004

L1 14 S CEREAL AND BOWL(W)LIFE
L2 153 S CEREAL AND HYDRATION
L3 2 S L2 AND DEHYDRATION

=> s l2 and dried

34576 DRIED

L4 19 L2 AND DRIED

=> d l4 all 1-19

=> s hydration and friability
1597 HYDRATION
157 FRIABILITY
L5 4 HYDRATION AND FRIABILITY

```
=> s cereal and soggy and (rehydrated or rehydration)
    23582 CEREAL
      45 SOGGY
      619 REHYDRATED
    1044 REHYDRATION
L6      0 CEREAL AND SOGGY AND (REHYDRATED OR REHYDRATION)

=> s cereal and (rehydrated or rehydration)
    23582 CEREAL
      619 REHYDRATED
    1044 REHYDRATION
L7      64 CEREAL AND (REHYDRATED OR REHYDRATION)

=> d 17 all 1-64
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FILE COVERS 1907 - 13 May 2004 VOL 140 ISS 20
FILE LAST UPDATED: 12 May 2004 (20040512/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s cereal and bowl(w)life
      23761 CEREAL
      3523 BOWL
      263118 LIFE
      6 BOWL(W)LIFE
L8      5 CEREAL AND BOWL(W)LIFE
```


=> s cereal and (hydrated or rehydrated)
23761 CEREAL
57057 HYDRATED
1594 REHYDRATED
L9 64 CEREAL AND (HYDRATED OR REHYDRATED)
=> d l9 cbib,ab 1-64

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NEWS	4	JAN 27	A new search aid, the Company Name Thesaurus, available in CA/CAPLUS
NEWS	5	FEB 05	German (DE) application and patent publication number format changes
NEWS	6	MAR 03	MEDLINE and LMEADLINE reloaded
NEWS	7	MAR 03	MEDLINE file segment of TOXCENTER reloaded
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NEWS	10	MAR 29	WPIFV now available on STN
NEWS	11	MAR 29	New monthly current-awareness alert (SDI) frequency in RAPRA
NEWS	12	APR 26	PROMT: New display field available
NEWS	13	APR 26	IFIPAT/IFIUDB/IFICDB: New super search and display field available
NEWS	14	APR 26	LITALERT now available on STN
NEWS	15	APR 27	NLDB: New search and display fields available
NEWS	16	May 10	PROUSDDR now available on STN
NEWS	17	May 19	PROUSDDR: One FREE connect hour, per account, in both May and June 2004
NEWS	18	May 12	EXTEND option available in structure searching
NEWS	19	May 12	Polymer links for the POLYLINK command completed in REGISTRY
NEWS EXPRESS			MARCH 31 CURRENT WINDOWS VERSION IS V7.00A, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 26 APRIL 2004
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=> FIL STNGUIDE		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

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FILE CONTAINS CURRENT INFORMATION.
 LAST RELOADED: May 7, 2004 (20040507/UP).

=> FIL HOME		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
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FILE 'HOME' ENTERED AT 11:21:25 ON 13 MAY 2004

=> file fsta		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.48

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=> s cereal and bowl(w)life
23582 CEREAL
608 BOWL
21793 LIFE
15 BOWL(W)LIFE
L1 14 CEREAL AND BOWL(W)LIFE

=> d l1 all 1-14

L1 ANSWER 1 OF 14 FSTA COPYRIGHT 2004 IFIS on STN
 AN 2004:M0588 FSTA
 TI Good things even better.
 AU Bollinger, H.
 CS J. Rettenmaier & Soehne, Rosenberg, Germany. E-mail
 Hartmut.Bollinger(a)jrs.de
 SO Lebensmitteltechnik, (2003), 35 (6) 40-42, 2 ref.
 ISSN: 0047-4290
 DT Journal
 LA German
 AB Utilization of different fibre sources for the manufacture of breakfast cereals was investigated. Wheat bran, oat fibre (Vitacel) or a mixture of Vitacel + inulin (Raftiline) were added to a basic **cereal** mix containing 3.7% fibre in order to provide a total dietary fibre content of approx. 6%. Samples were extruded and extrudates examined for abrasion effects, surface characteristics, crispness, flavour, colour and **bowl life** compared with control (no added fibre). Results showed that the different fibre types could be used to produce fibre-enriched **cereal** extrudates with similar sensory properties to the control, and that oat fibre, alone or with inulin, was a good alternative fibre source to traditional wheat bran. Addition of oat fibre

also improved processability of the **cereal** mix.

CC M (Cereals and Bakery Products)

CT BRAN; **CEREAL PRODUCTS**; EXTRUSION; FAT SUBSTITUTES; FIBRE; OATS; SENSORY PROPERTIES; WHEAT; BREAKFAST CEREALS; EXTRUDATES; OAT FIBRE; RAFTILINE; WHEAT BRAN

TN Vitacel

L1 ANSWER 2 OF 14 FSTA COPYRIGHT 2004 IFIS on STN

AN 2003:M1739 FSTA

TI Use of phytoglycogen extracted from corn to increase the **bowl-life** of breakfast **cereal**.

AU Anderson, B. A.; Singh, R. P.; Rovedo, C.

CS Correspondence (Reprint) address, R. P. Singh, Dep. of Biol. & Agric. Eng., Univ. of California, Davis, CA 95616, USA. Tel. 530-752-0811. Fax 530-752-5293. E-mail rpsingh(a)ucdavis.edu

SO Journal of Food Process Engineering, (2003), 26 (3) 315-322, 8 ref. ISSN: 0145-8876

DT Journal

LA English

AB The possibility of using phytoglycogen (a water-soluble polysaccharide) as an edible coating to extend the **bowl life** of ready to eat **cereal** (RTE) cereals was studied. Phytoglycogen was extracted from frozen sweet corn using water and ethanol. Phytoglycogen powder was dissolved in distilled water, sprayed onto RTE breakfast **cereal** and dried. The coated **cereal** was soaked in milk for 3 min and compared to control samples in terms of textural properties and milk absorption. Coated **cereal** showed a significant improvement in texture over control samples after soaking, while peak force for samples coated with phytoglycogen dropped by <20%. Coated samples were also found to absorb less milk than did uncoated samples. Results suggest that use of a corn phytoglycogen coating could potentially be used to increase the **bowl life** of some breakfast cereals.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS**; COATINGS; POLYSACCHARIDES; PROCESSED FOODS; TEXTURE; BREAKFAST CEREALS; READY TO EAT FOODS

L1 ANSWER 3 OF 14 FSTA COPYRIGHT 2004 IFIS on STN

AN 2003:M1525 FSTA

TI When good is not good enough.

AU Bollinger, H.

CS J. Rettenmaier & Sons, Ellwangen, Germany

SO Food Marketing & Technology, (2003), 17 (3) 11-13, 2 ref. ISSN: 0932-2744

DT Journal

LA English

AB The sensory properties of an extruded breakfast **cereal** made using the modern dietary oat fibre VITACEL® in combination with the inulin Raftiline® was compared with that of an extruded breakfast **cereal** made using standard quality wheat bran. The breakfast cereals were compared in terms of abrasiveness, surface smoothness, crunchiness, flavour, colour and **bowl life**. Results showed that the combination of VITACEL and Raftiline gave considerable advantages with regard to sensory properties and added value in comparison with the established wheat bran.

CC M (Cereals and Bakery Products)

CT BRAN; **CEREAL PRODUCTS**; FIBRE; OATS; POLYSACCHARIDES; SENSORY PROPERTIES; WHEAT; BREAKFAST CEREALS; DIETARY FIBRE; INULIN; OAT FIBRE; WHEAT BRAN

TN Raftiline; VITACEL

L1 ANSWER 4 OF 14 FSTA COPYRIGHT 2004 IFIS on STN

AN 2003:M0989 FSTA

TI Evaluation of numerical algorithms for the instrumental measurement of **bowl-life** and changes in texture over time for ready-to-eat breakfast cereals.
 AU Gregson, C. M.; Lee, T. C.
 CS Applied Research, Firmenich Inc., PO Box 5880, Princeton, NJ 08543, USA.
 E-mail christopher.gregson(a)firmenich.com
 SO Journal of Texture Studies, (2003), 33 (6) 505-528, 26 ref.
 ISSN: 0022-4901
 DT Journal
 LA English
 AB Numerical parameters were developed to express loss of crispness of breakfast cereals in milk, over time. Cornflakes were immersed in milk, rapidly drained and compressed in TA.XT2i texture analyser (Stable Micro Systems, UK) fitted with an Ottawa Cell. The data were analysed numerically to yield instrumental crispness parameters. **Bowl-life** was determined using an untrained sensory panel. 3 models (Weibull, exponential and modified exponential) successfully depicted the change in mechanical properties as a function of immersion time. An instrumental method of measuring **bowl-life** is described that measures peak force at a range of immersion times and models the data with the Weibull equation. It is suggested that this method may be a valuable asset to the breakfast cereals industry.
 CC M (Cereals and Bakery Products)
 CT **CEREAL PRODUCTS; TEXTURE; BREAKFAST CEREALS; CRISPNESS; MODELLING**

L1 ANSWER 5 OF 14 FSTA COPYRIGHT 2004 IFIS on STN
 AN 2003:M0043 FSTA
 TI Phytoglycogen coated food and process of preparing.
 IN Singh, R. P.; Rovedo, C. O.; Cura, J. A.
 PA United States of America, Regents of the University of California; Regents of the University of California, Oakland, CA, USA
 SO United States Patent, (2002)
 PI US 6451362 B1
 PRAI US @@@@-240162 19990129
 DT Patent
 LA English
 AB Phytoglycogen coatings on ready-to-eat cereals are described that provide extended **bowl life**. In addition, when added to food surfaces prior to frying, the coatings decrease loss of crispness during storage, and improve the appearance and flavour of the fried product.
 CC M (Cereals and Bakery Products)
 CT **CEREAL PRODUCTS; COATINGS; PATENTS; POLYSACCHARIDES; PROCESSED FOODS; BREAKFAST CEREALS; READY TO EAT FOODS**

L1 ANSWER 6 OF 14 FSTA COPYRIGHT 2004 IFIS on STN
 AN 2003:G0372 FSTA
 TI Methods of reducing friability of **cereal** products, potato chips, and freeze-dried foods, of increasing **bowl life** of **cereal** products, and of delaying rancidity of nuts.
 IN Krochta, J. M.; Soo-Yeun Lee; Trezza, T. A.
 PA Krochta, Davis, CA, USA
 SO United States Patent Application Publication, (2002)
 PI US 2002187230 A1
 PRAI US @@@@-879794 20010611
 DT Patent
 LA English
 AB A method of reducing the friability of foods such as **cereal** products (including ready-to-eat cereals and corn and tortilla chips), potato chips and freeze dried foods is described. It comprises the foods being in contact, but not overhydrated, with water, then drying the food to approx. its original water content. A similar method for delaying rancidity development in nuts is also described, and in its preferred form

it causes mild abrasion of the nuts to facilitate hydration.

CC G (Catering, Speciality and Multicomponent Foods)

CT **CEREAL PRODUCTS**; CHIPS; DRIED FOODS; NUTS; PATENTS;
PROTEINS CEREAL; RANCIDITY; WATER; FREEZE DRIED FOODS; FRIABILINS;
POTATO CHIPS

L1 ANSWER 7 OF 14 FSTA COPYRIGHT 2004 IFIS on STN

AN 2002:M1721 FSTA

TI Use of partially defatted peanut flour in breakfast **cereal** flakes.

AU Cheewapramong, P.; Riaz, M. N.; Rooney, L. W.; Lusas, E. W.

CS Dep. of Food Sci. & Tech., Univ. of Nebraska Lincoln, NE 68583-0919, USA.
Tel. (402) 472 2912. Fax (402) 472 1693. E-mail
pcheewal(a)bigred.unl.edu

SO Cereal Chemistry, (2002), 79 (4) 586-592, 31 ref.
ISSN: 0009-0352

DT Journal

LA English

AB Effect on extruded breakfast **cereal** flakes of replacing corn cones (Sunlite yellow) with peanut meal prepared from roasted or non-roasted partially defatted peanuts of cultivar Spanish was investigated. Peanut meal was added to the breakfast **cereal** formulations at 10, 20 or 30% of the total mix; other ingredients were corn flour (8.50%), white sugar (9.96%), malt (3.08%) and salt (1.96%). The control contained corn cones only at 76.50%. Mixtures were extruded using a corotating twin-screw extruder to produce collets, which were flaked and toasted. Extruded toasted flakes were analysed for physical, physicochemical and sensory properties. Moisture content, bulk density, hardness (force to break), colour, **bowl life**, water absorption, and water solubility indices were affected significantly by the amount of peanut meal added to the formulation. A sensory panel found extruded toasted flakes made from corn cones and up to 20% roasted peanut meal were as acceptable as the control flakes. Peanut flavour intensity was also evaluated; surprisingly, this was greater in flakes prepared with the non-roasted peanut meal compared with those containing roasted peanut meal.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS**; COLOUR; CORN; DENSITY; FLOURS; MECHANICAL PROPERTIES; PEANUTS; ROASTING; SALTS; SENSORY PROPERTIES; SOLUBILITY; BREAKFAST CEREALS; COMPOSITION; CORNFLAKES; HARDNESS; PEANUT MEAL

L1 ANSWER 8 OF 14 FSTA COPYRIGHT 2004 IFIS on STN

AN 2000(09):M1153 FSTA

TI Breakfast **cereal** biscuit comprising waxy grain.

IN Lewis, D. A.; Lewis, D. A.; Lewis, V. M.

PA Byron Australia Pty Ltd.; Byron Australia, Rushcutters Bay, NSW 2001, Australia

SO PCT International Patent Application, (2000)

PI WO 2000028836 A1

PRAI AU 1998-7162 19981117

DT Patent

LA English

AB An improved breakfast **cereal** biscuit is described comprising grain, wherein the grain includes waxy grain in an amount of $\geq 20\%$ by weight of total grain. The grain is hydrated and cooked sequentially and/or simultaneously, rolled into flakes, and either agglomerated then toasted into a desired biscuit shape or toasted then agglomerated into a desired biscuit shape. These improved breakfast **cereal** biscuits have extended **bowl life**, improved nutritional value, tender crisp texture, better flavour and require less energy for manufacture than standard flaked wheat breakfast biscuits.

CC M (Cereals and Bakery Products)

CT BISCUITS; **CEREAL PRODUCTS**; PATENTS; BREAKFAST CEREALS

L1 ANSWER 9 OF 14 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1998(11):M1322 FSTA
 TI Comparing cornflake manufacturing processes.
 AU Huang, W. N.
 CS Dep. of Grain Sci. & Ind., Kansas State Univ., Manhattan, KS 66506, USA
 SO Cereal Foods World, (1998), 43 (8) 641-643, 9 ref.
 ISSN: 0146-6283
 DT Journal
 LA English
 AB A comparison is made of the traditional batch steam process used for manufacture of cornflakes and a continuous extrusion cooking method. Differences in final product quality are also discussed. It is concluded that continuous extrusion cooking of cornflakes has some economic and processing advantages over conventional batch cooking, including faster processing time, lower processing and energy costs, less floor space requirements and greater flexibility. However sensory evaluation and physical and microscopic analysis revealed that the conventional process produces some desirable attributes in the final product, including thicker cells which are generally associated with longer **bowl life**.
 CC M (Cereals and Bakery Products)
 CT **CEREAL PRODUCTS; CORN; EXTRUSION; CORNFLAKES; EXTRUSION COOKING**

L1 ANSWER 10 OF 14 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1998(11):M1317 FSTA
 TI Texture comparison of traditional and extruded cornflakes.
 AU Vamshidhar Puppala
 CS Dep. of Grain Sci. & Ind., Kansas State Univ., Manhattan, KS 66506, USA
 SO Cereal Foods World, (1998), 43 (8) 650-651, 7 ref.
 ISSN: 0146-6283
 DT Journal
 LA English
 AB Six commercial brands of cornflakes were analysed for textural properties by measuring the peak force (N) needed to fracture the **cereal** flakes in both dry and wet (**bowl-life**) states. Water absorption index (WAI) was also determined. Results showed that the sample that showed the highest peak force in the dry test also had the highest values in the **bowl life** test, while the sample with the lowest value in the dry test had the lowest value in the **bowl-life** test. The brands showed significant differences ($P < 0.0001$) in their peak force requirements at all 3 periods of **bowl life** tested (i.e. after soaking for 1.0, 2.5 and 5.0 min in distilled water). No significant differences were observed between products with regard to WAI. The relationship between cornflake texture and cornflake processing conditions (extrusion vs. traditional batch cooking) is also discussed.
 CC M (Cereals and Bakery Products)
 CT **CEREAL PRODUCTS; CORN; SORPTION; TEXTURE; CORNFLAKES; WATER SORPTION**

L1 ANSWER 11 OF 14 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1998(01):M0024 FSTA
 TI Extruded breakfast cereals with improved **bowl life**.
 AU Soete, J. de
 CS Orafti, Belgium
 SO Research Disclosure, (1997), No. 399, 475
 ISSN: 0374-4353
 DT Journal
 LA English
 AB **Bowl life** of an extruded **cereal** is the time that the **cereal** can stay in contact with milk before becoming soft. Use of inulin and oligofructose to extend the **bowl**

life of a crispy extruded **cereal** is described on the basis of studies carried out in which oligofructose (Raftilose®) or inulin (Raftiline®) were added to a formulation for rice crisps at 8, 11 and 14%. **Bowl life** measurements taken after addition of 100 ml milk to 3 g of the extruded products showed that after 3 min, test products were still more crispy than those made without inulin or oligofructose.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS**; FAT SUBSTITUTES; POLYSACCHARIDES; SUGARS; TEXTURE; BREAKFAST CEREALS; CRISPNESS; OLIGOFRUCTOSE; RAFTILINE

TN Raftilose

L1 ANSWER 12 OF 14 FSTA COPYRIGHT 2004 IFIS on STN

AN 1992(06):M0073 FSTA

TI Process of making ready-to-eat cereals.

IN Calandro, T. P.; Murray, J.

PA Nabisco Brands Inc.; Nabisco Brands, Parsippany, NJ, USA

SO United States Patent, (1992)

PI US 5093146

PRAI US @@@@-597314 19901015

DT Patent

LA English

AB A ready-to-eat **cereal** is prepared from a cookie formulation which includes flour, sugar, shortening or fat and a **bowl-life** extender. The **bowl-life** extender consists of a waxy starch, preferably a pregelatinized starch from waxy maize, and a cold water swelling granular starch. Dough is prepared by mixing the ingredients to form a cookie dough-like consistency. Dough may be rotary moulded or sheeted and cut into bite-size pieces and baked. Baked pieces may be coated with an optional sugar glaze. [From En summ.]

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS**; PATENTS; UNITED STATES OF AMERICA

L1 ANSWER 13 OF 14 FSTA COPYRIGHT 2004 IFIS on STN

AN 1987(01):V0173 FSTA

TI Ready-to-eat cereals.

IN Bone, D. P.; Brophy, K. M.; Champion, R. M.; Meschewski, R. J.; McKinney, C. W.

PA Quaker Oats Co.

SO United States Patent, (1986)

PI US 4588596

DT Patent

LA English

AB Addition of magnesium stearate to the dough base used to make ready-to-eat breakfast cereals enables the **cereal** to remain crisp after milk has been added for ≥ 3 min. The efficacy of the magnesium stearate in extending the **bowl-life** of the **cereal** depends on its fat content, and ideally should be between 3 and 17%.

CC V (Patents)

CT ADDITIVES; **CEREAL PRODUCTS**; MAGNESIUM; PATENTS; TEXTURE; BREAKFAST CEREALS; CRISPNESS; PATENT; STEARATE # READY-TO-EAT

L1 ANSWER 14 OF 14 FSTA COPYRIGHT 2004 IFIS on STN

AN 1983(07):M1049 FSTA

TI Corn bran expanded **cereal**.

IN Duvall, L. F.

PA Quaker Oats Co.

SO United States Patent, (1982)

PI US 4350714

DT Patent

LA English

AB An extruded, expanded **cereal** product containing substantial levels of corn bran is described. Explosive expansion of the

cereal dough with sudden release of pressure in the cooking extrusion step results in a high degree of **cereal** piece disintegration unless the corn bran ingredient which is used in the process is within critical particle size ranges. The product has preferred sensory qualities in comparison with wheat bran. A high fibre expanded ready to eat product having improved textural and **bowl life** characteristics, compared to commercially available ready-to-eat cereals containing wheat bran, is described.

CC M (Cereals and Bakery Products)

CT BRAN; **CEREAL PRODUCTS**; CORN; PATENTS; CORN BRAN; EXTRUDED; PATENT

=> s cereal and hydration

23582 CEREAL

1597 HYDRATION

L2 153 CEREAL AND HYDRATION

=> s l2 and dehydration

2945 DEHYDRATION

L3 2 L2 AND DEHYDRATION

=> d l3 all 1-2

L3 ANSWER 1 OF 2 FSTA COPYRIGHT 2004 IFIS on STN

AN 1995(10):M0084 FSTA

TI Assessment of a pin deformation test for measurement of mechanical properties of breakfast **cereal** flakes.

AU Georget, D. M. R.; Parker, R.; Smith, A. C.

CS Inst. of Food Res., Norwich Lab., Norwich Research Park, Colney, Norwich NR4 7UA, UK

SO Journal of Texture Studies, (1995), 26 (2) 161-174, 31 ref.
ISSN: 0022-4901

DT Journal

LA English

AB A pin deformation test for measurement of mechanical properties of breakfast **cereal** flakes, where well-defined procedures like the 3 point bend test are not easily carried out, was assessed. Properties were compared with literature on formed specimens of **cereal** components, starch polymers and proteins. A classical analysis of a centrally loaded disc on a circular support was used to obtain the Young's modulus, maximum stress and maximum strain from the force-displacement curve. The technique was validated for synthetic polymer discs of known modulus. The Young's modulus for formed discs of starch and gluten as a function of water content agreed reasonably well with independent results using a 3 point bend test. Formed discs of ground flake showed a similar response to that of gluten. The technique was then applied to individual flakes which were flattened by a **hydration-dehydration** procedure and conditioned to different water [moisture] contents [6.1-6.2, 12.9-13.0 and 28.1-29.0% wet weight basis]. The stiffness and stress at failure decreased with increasing water content as reported for gluten but their magnitudes were lower, which was attributed to the greater porosity relative to pressed specimens. Some unflattened and low water content flakes were also tested and (although not conforming to the planar geometry of the analysis) showed similarity in stiffness (although not in strength) with their flattened counterparts.

CC M (Cereals and Bakery Products)

CT ANALYTICAL TECHNIQUES; **CEREAL PRODUCTS**; MECHANICAL PROPERTIES; MOISTURE CONTENT; PHYSICAL PROPERTIES; RHEOLOGICAL PROPERTIES; BREAKFAST CEREALS; DEFORMATION

L3 ANSWER 2 OF 2 FSTA COPYRIGHT 2004 IFIS on STN

AN 1969(02):G0053 FSTA

TI Liquid dextrine lowers cost of protecting cereals, confections.
 AU Strong, B. R.
 CS Clinton Corn Processing Co., Clinton. Iowa 52732, USA
 SO Food Processing, (1968), 29 (8) 32
 DT Journal
 LA English
 AB Liqui-Dex is used as a coating for **cereal**, freeze-dried fruit pellets, nuts etc. and guards against **dehydration**, **hydration**, discolouration, flavour loss and odour pick-up.
 CC G (Catering, Speciality and Multicomponent Foods)
 CT CEREALS; COATING; DEXTRINS; NUTS; **CEREAL**; DEXTRINE; FREEZE-DRIED # PELLETS; FRUIT; LIQUID; LIQUID # FREEZE-DRIED # PELLETS

=> file his

'HIS' IS NOT A VALID FILE NAME

SESSION CONTINUES IN FILE 'FSTA'

Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files that are available. If you have requested multiple files, you can specify a corrected file name or you can enter "IGNORE" to continue accessing the remaining file names entered.

=> fhis

FHIS IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system. For a list of commands available to you in the current file, enter "HELP COMMANDS" at an arrow prompt (=>).

=> d his

(FILE 'HOME' ENTERED AT 11:21:12 ON 13 MAY 2004)

FILE 'STNGUIDE' ENTERED AT 11:21:20 ON 13 MAY 2004

FILE 'HOME' ENTERED AT 11:21:25 ON 13 MAY 2004

FILE 'FSTA' ENTERED AT 11:21:35 ON 13 MAY 2004

L1 14 S CEREAL AND BOWL(W)LIFE
 L2 153 S CEREAL AND HYDRATION
 L3 2 S L2 AND DEHYDRATION

=> s l2 and dried

34576 DRIED

L4 19 L2 AND DRIED

=> d l4 all 1-19

L4 ANSWER 1 OF 19 FSTA COPYRIGHT 2004 IFIS on STN
 AN 2003:M0614 FSTA
 TI Mixograph responses of gluten and gluten-fortified flour for gluten produced by cold-ethanol or water displacement of starch from wheat flour.
 AU Robertson, G. H.; Cao, T. K.
 CS Process Chem. & Eng. Res. Unit, W. Reg. Res. Cent., ARS, USDA, 800 Buchanan St., Albany, CA 94710, USA. Tel. 510-559-5866. Fax 510-559-5818. E-mail grobertson(a)pw.usda.gov
 SO Cereal Chemistry, (2002), 79 (5) 737-740, 21 ref.
 ISSN: 0009-0352
 DT Journal
 LA English
 AB Yield of gluten obtained by cold-ethanol displacement of starch from developed wheat dough matches that achieved by water displacement, but the mixing properties of the isolated proteins are different. Mixing properties for cold-ethanol-processed wheat gluten concentrates

(CE-gluten) and water-processed concentrates (W-gluten) were characterized using a 10 g mixograph. Gluten concentrates were produced on a laboratory scale using batter-like technology: development with water as a batter, dispersion with the displacement fluid, and screening. The displacing fluid was water for W-gluten and cold ethanol ($\geq 70\%$ volume -12°C) for CE-gluten. Both gluten types were freeze-dried at -10°C then milled. Mixograms were obtained for gluten concentrates hydrated to absorptions of 123-234% and gluten blended with a low protein (9.2% protein) soft wheat flour (cv. Moro) to obtain up to 16.2% total protein concentration. Mixograms for gluten or gluten-fortified flour

were both qualitatively and quantitatively distinguishable. Differences in the mixogram parameters suggested greater stability and strength for CE-gluten than for W-gluten and could be markedly exaggerated by increasing the water absorption to 167-234%. It is thought that mixograms for evaluation of gluten have not been previously reported in this **hydration** range. Mixograms for the fortified flour suggest that less CE-gluten than W-gluten would be required to produce identical mixing properties.

CC M (Cereals and Bakery Products)

CT APPARATUS; CONCENTRATION; **FLOURS CEREAL**; FOOD ENRICHMENT; GLUTEN; WHEAT; FORTIFICATION; MIXOGRAPHS; WHEAT FLOUR; WHEAT GLUTEN

L4 ANSWER 2 OF 19 FSTA COPYRIGHT 2004 IFIS on STN

AN 2003:G0372 FSTA

TI Methods of reducing friability of **cereal** products, potato chips, and freeze-dried foods, of increasing bowl life of **cereal** products, and of delaying rancidity of nuts.

IN Krochta, J. M.; Soo-Yeun Lee; Trezza, T. A.

PA Krochta, Davis, CA, USA

SO United States Patent Application Publication, (2002)

PI US 2002187230 A1

PRAI US @@@@-879794 20010611

DT Patent

LA English

AB A method of reducing the friability of foods such as **cereal** products (including ready-to-eat cereals and corn and tortilla chips), potato chips and freeze **dried** foods is described. It comprises the foods being in contact, but not overhydrated, with water, then drying the food to approx. its original water content. A similar method for delaying rancidity development in nuts is also described, and in its preferred form it causes mild abrasion of the nuts to facilitate **hydration**.

CC G (Catering, Speciality and Multicomponent Foods)

CT **CEREAL PRODUCTS**; CHIPS; **DRIED FOODS**; NUTS; PATENTS; **PROTEINS CEREAL**; RANCIDITY; WATER; **FREEZE DRIED FOODS**; FRIABILINS; POTATO CHIPS

L4 ANSWER 3 OF 19 FSTA COPYRIGHT 2004 IFIS on STN

AN 2002:M1279 FSTA

TI A study of how size distribution of gluten proteins, surface properties of gluten and dough mixing properties relate to baking properties of wheat flours.

AU Tronsmo, K. M.; Faergestad, E. M.; Longva, A.; Schofield, J. D.; Magnus, E. M.

CS MATFORSK, Norwegian Food Res. Inst., Osloveien 1, N-1430 As, Norway. Tel. +47 64 97 01 04. Fax +47 64 97 03 33. E-mail kari.tronsmo(a)matforsk.no

SO Journal of Cereal Science, (2002), 35 (2) 201-214, 44 ref.
ISSN: 0733-5210

DT Journal

LA English

AB Functionality related to surface properties (oil and water absorption, emulsifying and foaming properties) of freeze **dried** gluten was

studied alongside traditional rheological tests evaluating wheat proteins. Multivariate statistical methods (partial least squares regression) were used to relate surface properties of gluten, quantity and rheological properties of glutenin macropolymer (GMP), size-exclusion chromatograms of flour proteins, and mixing and dough properties to the baking performance of bread wheats. 9 Norwegian grown bread wheat cultivars were used (spring wheat cv. Avans, Bastian, Brakar, Hanno, Polkka and Tjalve, and winter wheat cv. Folke, Portal and Rudolf). Whereas both protein content and protein composition positively affect pan loaf quality, the small scale baking of hearth loaf provided a good model system for distinguishing between effects of these 2 factors. Oil absorption and **hydration** capacities of gluten were positively related to loaf form ratio, mixing properties, presence of high mol. weight glutenin subunits 5 + 10, proportion of SDS-insoluble glutenins and rheological properties of GMP, and negatively related to flour protein contents. Increased flour protein content within each cultivar increased pan loaf volume, but adversely affected form ratio of hearth loaves.

CC M (Cereals and Bakery Products)

CT BAKING; BREADMAKING; **FLOURS CEREAL**; FUNCTIONAL PROPERTIES; GLUTEN; GLUTENIN; RHEOLOGICAL PROPERTIES; WHEAT; BAKING PROPERTIES; CV; SURFACE ACTIVE PROPERTIES; WHEAT FLOUR

L4 ANSWER 4 OF 19 FSTA COPYRIGHT 2004 IFIS on STN

AN 2000(05):M0603 FSTA

TI [**Cereal** flakes with inclusions comprising whole **cereal** grains or grain pieces, and process for their manufacture.]

IN Soro, M.; Ansermet, F.

PA Societe des Produits Nestle SA; Nestle, 1800 Vevey, Switzerland

SO European Patent Application, (1999)

PI EP 963705 A1

PRAI EP 1998-201455 19980507

DT Patent

LA French

AB A **dried** food product based on dehusked cereals comprises **cereal** flakes containing whole **cereal** grains or crushed **cereal** grain pieces in a flour-based matrix. On **hydration**, this product has an especially heterogenous structure.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS**; PATENTS

L4 ANSWER 5 OF 19 FSTA COPYRIGHT 2004 IFIS on STN

AN 1999(01):M0065 FSTA

TI Substitution of concentrated ethanol for water in the laboratory washing fractionation of protein and starch from hydrated wheat flour.

AU Robertson, G. H.; Cao, T.

CS Process Chem. & Eng. Res. Unit., W. Reg. Res. Cent., Pacific West Area, ARS, USDA, 800 Buchanan, St., Albany, CA 94710, USA

SO Cereal Chemistry, (1998), 75 (4) 508-513, 16 ref.

ISSN: 0009-0352

DT Journal

LA English

AB An unprecedented, ethanol-based, washing process was used at a laboratory scale to produce both concentrate protein and starch fractions from hydrated wheat flour. In this multistep process, flour was first hydrated and mixed to a batter and then chilled and rested. The cold batter was then mixed and washed in chilled concentrate ethanol using a modified device that normally applies the water-based Martin process [used commercially for separating wheat protein and starch]. Control of the separation was affected by each of these steps. For instance, the **hydration** of the flour, time of mixing, temperature of the wash, ethanol concentration and time of

washing were influential. The method produced a gluten concentrate similar in yield and protein content to that reported for a pilot-scale

Martin process but without the need for added salt. Notably, ethanol washing resulted in nonsticky, partially disintegrated curds that **dried** easily, whereas water washing resulted in a sticky, glutinous, cohesive mass that **dried** slowly. The process has commercial potential to reduce water and energy use, reduce wastewater generation and environmental impact and improve product recovery. The process also has the potential to reduce the capital complexity of the drying step and create convenient opportunities for protein subfractionation.

CC M (Cereals and Bakery Products)

CT CLEANING; ETHANOL; FRACTIONATION; **PROTEINS CEREAL**; STARCH; WHEAT; **CEREAL PROTEINS**; WASHING; WHEAT STARCH

L4 ANSWER 6 OF 19 FSTA COPYRIGHT 2004 IFIS on STN

AN 1999(01):M0001 FSTA

TI Sweetener effects on flaked millet breakfast cereals.

AU Ferriola, D.; Stone, M.

CS Correspondence (Reprint) address, M. Stone, Dep. of Food Sci. & Human Nutr., Colorado State Univ., Fort Collins, CO 80523, USA

SO Journal of Food Science, (1998), 63 (4) 726-729, 20 ref.
ISSN: 0022-1147

DT Journal

LA English

AB White proso and foxtail millets were used in the formulation of a flaked, whole grain, ready-to-eat (RTE) breakfast **cereal** where the effects of **dried** honey or molasses as secondary sweeteners were evaluated. [Physical and sensory properties of such products were studied.] Some sensory attributes were affected by type of millet and by secondary sweetener. Crispness was affected by sweetener type after 4 min of **hydration**. Sweetness scores and colour were inversely related, whether evaluated by sensory or instrumental means. It is concluded that use of 100% millet in RTE breakfast cereals is feasible; type of sweetener used affects **cereal** colour, flavour and crispness in milk.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS**; HONEYS; MILLET; MOLASSES; PHYSICAL PROPERTIES; PROCESSED FOODS; SENSORY PROPERTIES; BREAKFAST CEREALS; FOXTAIL MILLET; READY TO EAT FOODS; WHITE PROSO MILLET

L4 ANSWER 7 OF 19 FSTA COPYRIGHT 2004 IFIS on STN

AN 1996(09):M0123 FSTA

TI [Foods based mainly on plant flours not of breadmaking quality, and methods for their manufacture.]

IN Kobrehel, K.; Nimbona, C.

PA France, Institut National de la Recherche Agronomique

SO French Patent Application, (1996)

PI FR 2724819 A1

PRAI FR 1994-11336 19940922

DT Patent

LA French

AB A process is described for manufacture of bakery products from flours not of breadmaking quality, including sorghum, rice, corn, soybean or cassava flours. A mix mainly comprising one of these flours is mixed with water to a degree of **hydration** permitting preparation of a dough; this dough is then pressed, **dried** and baked.

CC M (Cereals and Bakery Products)

CT BAKERY PRODUCTS; **CEREAL PRODUCTS**; PATENTS

L4 ANSWER 8 OF 19 FSTA COPYRIGHT 2004 IFIS on STN

AN 1993(11):M0157 FSTA

TI Method for rapidly producing stable flour from newly harvested wheat.

IN Hosenev, R. C.; Faubion, J. M.; Shelke, K.

PA Pillsbury Co.; Pillsbury Co., Minneapolis, MN, USA

SO United States Patent, (1993)
 PI US 5194276
 PRAI US @@@@-771341 19911004
 DT Patent
 LA English
 AB A method for producing wheat flour from newly harvested wheat is described. Harvested wheat is hydrated (moisture content of endosperms is increased by $\geq 4-5$ weight%) and then **dried** to a moisture content approx. equal to that of the original newly harvested wheat. Milling of the treated wheat produces a wheat flour with improved baking properties compared with untreated wheat. Rapid conversion of the newly harvested grain to a more millable form is illustrated by the increased **hydration** capacity of the milled flour. This process permits production of a flour with desirable baking properties from newly harvested wheat without the necessity of the usual 2-3 month post-harvest ageing period. [From En summ.]
 CC M (Cereals and Bakery Products)
 CT **CEREAL PRODUCTS; CEREALS; FLOURS CEREAL; PATENTS; WHEAT; WHEAT FLOUR**

L4 ANSWER 9 OF 19 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1991(08):J0055 FSTA
 TI Digestibility of dry legume starch and protein.
 In 'Proceedings of the world congress on vegetable protein utilization in human foods and animal feedstuffs'. Conference. Singapore, October 1988. PO Box 3489 Champaign, IL 61826, USA; American Oil Chemists' Society [see FSTA (1991) 23 8G9].
 AU Bennink, M. R.; Srisuma, N.; United States of America, American Oil Chemists' Society [Vegetable Protein Utilization Symposium]
 CS Food Sci. & Human Nutr., Michigan State Univ., East Lansing, MI 48824-1224, USA
 SO (1989), pp. 266-272, 86 ref.
 DT Conference
 LA English
 AB The digestibility of starch and protein in dry legumes is lower than in **cereal** grains and many other foodstuffs. Factors contributing to reduced digestibility include: increased dietary fibre intake; intact cell walls which hinder digestive enzymes from gaining access to starch and protein; residual lectin activity; limited proteolysis of certain protein subfractions; incomplete **hydration** of the starch granule; and amylose retrogradation. Incomplete protein digestion represents a loss of essential nutrients and research efforts should be devoted toward improving legume protein digestibility. Slow digestion of starch is beneficial, as it reduces hyperglycaemia and hypertriglyceridaemia, which are risk factors in development of cardiovascular disease. It is likely that slow digestion of starch and retrograded amylose are major contributors to the flatulence problem frequently associated with legume consumption. The challenge is to produce legumes which provide a low glycaemic index and a good source of fibre with improved protein digestibility and reduced flatulence.
 CC J (Fruits, Vegetables and Nuts)
 CT **DIGESTIBILITY; DRIED FOODS; LEGUMES; NUTRITIONAL VALUES; PROTEINS VEGETABLE; STARCH; VEGETABLES; LEGUME PROTEINS; STARCHES SPECIFIC**

L4 ANSWER 10 OF 19 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1987(04):J0131 FSTA
 TI Effect of parboiling on **hydration** and sedimentation characteristics of cassava (Manihot esculenta Crantz) chips.
 AU Raja, K. C. M.; Mathew, A. G.
 CS Reg. Res. Lab., Trivandrum-695 019, India
 SO Journal of Food Science and Technology, India, (1986), 23 (1) 39-41, 5 ref.
 DT Journal

LA English

AB Cassava (var. Malayan-4) chips (4.0-5.0 mm thickness) were (i) **dried** in cross flow drier at $58 \pm 2^\circ\text{C}$ for 1 h to 10% moisture level and (ii) dipped in boiling water (parboiling) for 5 and 10 min and **dried** for 8 h to 8% moisture level. Chips from (i) and (ii) were soaked for up to 24 h at room temperature ($28-30^\circ\text{C}$), soaked for 15 min at 60° , 80° , 92° and 96°C , or cooked at $96-98^\circ\text{C}$ after soaking for 5, 10, 15 or 20 min. At room temperature (ii) showed higher water absorption. The equilibrium moisture content attained by soaking for 8 h was higher in (ii). Water absorption was higher in chips parboiled by dipping in boiling water for 10 min. Correlation was observed between **hydration** of chips and temperature of soaking; (i) absorbed 70% of their final water uptake within 5 min of soaking whereas (ii) showed a lower % of water absorption (54.32 to 61.50%) at this time, due to the gelatinization of a thin layer of starch on the surface of parboiled chips. Flour from (ii) showed a higher sediment volume than the flour from (i). A positive correlation between equilibrium moisture content and sediment volume was observed at room temperature

CC J (Fruits, Vegetables and Nuts)

CT BOILING; CASSAVA; CHIPS; FLOURS; **FLOURS CEREAL**; MOISTURE CONTENT; PRECIPITATION; RECONSTITUTED FOODS; CASSAVA CHIPS; CASSAVA FLOUR; FLOUR; **HYDRATION**; MEAL; PARBOILING; SEDIMENTATION

L4 ANSWER 11 OF 19 FSTA COPYRIGHT 2004 IFIS on STN

AN 1985(06):M0048 FSTA

TI [Influence of the extrusion parameters on gelatinization degree and viscosity of rice flour extrudates.]
Untersuchung des Einflusses der Extrusionsparameter auf Verkleisterungsgrad und Viskosität von Reismehlextrudaten.

AU Meister, U.; Schneeweiss, V.

CS Inst. fuer Getreideverarbeitung, Bergholz-Rehbruecke, German Democratic Republic

SO Lebensmittelindustrie, (1984), 31 (1) 27-30, 21 ref.

DT Journal

LA German

SL English; Russian; French

AB As the conventional drum-drying method for production of instant rice flour is very energy intensive, studies were conducted on manufacture of this product by an extrusion process. Extensive studies covering both technological and raw material variables showed that the drum-drying method gave the best water binding; extruded samples showed very variable water binding, depending on the degree of gelatinization. Roller-**dried** rice flour took up water very rapidly; ground extrudates required a **hydration** time of 1-2 min.

CC M (Cereals and Bakery Products)

CT EXTRUSION; **FLOURS CEREAL**; GELATION; INSTANT FOODS; RICE; DEGREE; FLOUR SPECIFIC; INSTANT; RICE FLOUR

L4 ANSWER 12 OF 19 FSTA COPYRIGHT 2004 IFIS on STN

AN 1982(04):M0457 FSTA

TI Gas chromatography-mass spectroscopy investigations on the flavour chemistry of oat groats.

AU Heydanek, M. G.; McGorin, R. J.

CS John Stuart Res. Lab., Quaker Oats Co., Barrington, Illinois 60010, USA

SO Journal of Agricultural and Food Chemistry, (1981), 29 (5) 950-954, 14 ref.

DT Journal

LA English

AB **Dried** oat groat volatiles were characterized by GLC-MS in an effort to study the inherent flavour chemicals in oats before processing. Volatile isolation by vacuum distillation and Tenax headspace trapping, both before and after **hydration**, resulted in compositionally different isolates. Dry vacuum distillates primarily contained

C.sub.1.sub.0H.sub.1.sub.6 monoterpenes, alkylbenzenes, and hexanal. Vacuum steam distillation resulted in large increases of volatiles presumed to originate via residual enzyme activity on oat lipids. Major amounts of C.sub.4-C.sub.6 alcohols, hexanal, 1-octen-3-ol, nonanal, and (E,E)- and Z,E)-3,5-octadien-2-one were found in the hydrated groat isolates. Headspace isolation, dry and hydrated, also exhibited this difference. Oat groats do not appear to contain large amounts of inherent flavour components but depend on further processing for oat flavour development.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS; DRIED FOODS; FLAVOUR COMPOUNDS; GAS CHROMATOGRAPHY; MASS SPECTROSCOPY; OATS; VOLATILE COMPOUNDS; GAS LIQUID CHROMATOGRAPHY; GLC; GROATS; MASS SPECTROMETRY; MS; OAT GROATS; VOLATILE # GLC-MS # DRIED; VOLATILE # GLC-MS # DRIED OAT**

L4 ANSWER 13 OF 19 FSTA COPYRIGHT 2004 IFIS on STN

AN 1981(08):M0817 FSTA

TI Protein isolate from alkaline extraction of air-classified high protein soft wheat flour.

AU Wu, Y. V.; Stringfellow, A. C.

CS USDA N. Reg. Res. Cent., SEA-AR, 1815 N. University, Peoria, Illinois 61604, USA

SO Journal of Food Science, (1980), 45 (5) 1383-1386, 23 ref.

DT Journal

LA English

AB An alkaline extraction procedure was used to produce protein and starch fractions from air-classified high-protein soft wheat flour. Optimum extraction was at pH 11.1 in 0.03N NaOH with a solvent-to-flour ratio of 6:1. After centrifugation, the alkaline extract was adjusted to pH 6.1 to yield a precipitate and a supernatant. Protein content (N x 5.7) of the isolates (**dried** precipitates) varied between 88 and 96%, accounting for 64-72% of the total protein. The isolates had from 1.7 to 1.8 g lysine and 3.6 to 4.7 g total sulphur amino acids/16 g N. The isolates had min. solubility of around 9% near pH 6; solubility was about 90% at pH 2.3 and 62-93% at pH 9.7. All isolates had good emulsifying activity (47-98%), emulsion stability (46-97%), and **hydration** capacity (2.7-3.0).

CC M (Cereals and Bakery Products)

CT **EXTRACTION; FLOURS CEREAL; PHYSICAL PROPERTIES; PROTEINS; PROTEINS CEREAL; STARCH; WHEAT; ALKALINE # HIGH SOFT; ALKALINITY; FLOUR SPECIFIC; STARCHES SPECIFIC; WHEAT FLOUR**

L4 ANSWER 14 OF 19 FSTA COPYRIGHT 2004 IFIS on STN

AN 1980(04):M0405 FSTA

TI Barley protein concentrate from high-protein, high-lysine varieties.

AU Wu, Y. V.; Sexson, K. R.; Sanderson, J. E.

CS USDA N. Reg. Res. Cent., SEA-AR, Peoria, Illinois 61604, USA

SO Journal of Food Science, (1979), 44 (6) 1580-1583

DT Journal

LA English

AB An alkaline extraction procedure was developed to produce protein concentrate and starch fraction from ground barley. Optimum extraction was at pH 11.2 in 0.045-0.06N NaOH with a barley/solvent ratio of 1:10. After centrifugation, the alkaline extract was adjusted in pH 5.3-5.4 to yield a precipitate and a supernatant. Protein content (N x 6.25) of the concentrates (**dried** precipitate) varied between 72 and 84%, and the concentrates accounted for 51-72% of the total barley proteins. The concentrates had 2.9-5.0 g lysine and 2.1-4.2 g total S amino acids/16 g of N. The concentrates were insoluble in water between pH 5 and 6; solubility was 42-47% at pH 2.2 and 39-82% at pH 9.6. All protein concentrates had good **hydration** capacity (2.7-3.7).

CC M (Cereals and Bakery Products)

CT **BARLEY; LYSINE; PROTEIN CONCENTRATES; PROTEIN PRODUCTS; PROTEINS**

CEREAL; BARLEY PROTEIN CONCENTRATES; LYSINE-HIGH PROTEINS-HIGH

L4 ANSWER 15 OF 19 FSTA COPYRIGHT 2004 IFIS on STN
AN 1979(12):G1002 FSTA
TI Rice-barley malt combo improves functionality and nutrition of meats, breadings and baked goods.
AU Moore, K. K.
SO Food Product Development, (1978), 12 (5) 74
DT Journal
LA English
AB Malto-Rice Flour consists of high-quality rice and barley malt slurried together in the brewing process, hydrolysed by enzyme action, strained, rinsed and **dried**, and then milled with conventional flour milling equipment. Protein content of the final product is 2-3x that of **cereal** flours and provides a PER of 1.8. Its composition is as follows: crude fibre, 10%; fat, 8.2%; moisture, 5.3%; ash, 3.5%; and carbohydrate, 44.6%. Essential amino acid composition of the flour is tabulated. The flour, available in 50 and 80 mesh screen, imparts a mild **cereal**-type flavour, is odourless, and has a whole wheat colour. High **hydration** capacity and low oil absorption of the ingredient can be used to advantage in meat products. Other typical applications include speciality breads, cookies, batters, breading, meat products, adult cereals, snacks, pancakes, muffins and breakfast bars.
CC G (Catering, Speciality and Multicomponent Foods)
CT BAKERY PRODUCTS; BARLEY; **CEREAL PRODUCTS; FLOURS CEREAL**; MALT; MEAT PRODUCTS; RICE; COMPOSITION; FLOUR; FLOUR SPECIFIC; RICE-BARLEY; RICE-BARLEY MALT FLOUR

L4 ANSWER 16 OF 19 FSTA COPYRIGHT 2004 IFIS on STN
AN 1979(05):M0461 FSTA
TI Corn flour: reduction of particle size.
AU Badi, S. M.; Hoseney, R. C.; Eustace, W. D.
CS Dep. of Grain Sci. & Ind., Kansas Agric. Exp. Sta., Kansas State Univ., Manhattan, Kansas 66506, USA
SO Cereal Chemistry, (1978), 55 (4) 489-494, 12 ref.
DT Journal
LA English
AB The particle size of dry-milled corn flour (-50 W) could be reduced by repeated roller milling or pin milling. Both methods, however, increased starch damage. Hydrating corn flour with water followed by air drying also reduced particle size. Lyophilizing similar samples instead of air drying them resulted in materially finer particle size, indicating that air drying may induce agglomeration. Mercaptoethanol (0.6% in **hydration** water), an effective solvent for certain corn proteins, effectively reduced particle size of flour samples **dried** by either lyophilization or solvent drying (ethyl alcohol). Using ethanol to dry the sample resulted in about 1/3 of the corn protein being solubilized. Samples **dried** by lyophilization gave a definite protein shift during air classification. Combining treatment with mercaptoethanol and mild wet grinding produced a sample with 83% of the particles finer than 50 µm. Repeated treatments with NaHSO₃ gave a sample in which 96.5% of the particles were finer than 50 µm.
CC M (Cereals and Bakery Products)
CT CORN; **FLOURS CEREAL**; MILLING; PARTICLES; PHYSICAL PROPERTIES; REDUCTION; CORN FLOUR; FLOUR SPECIFIC; R; SIZE

L4 ANSWER 17 OF 19 FSTA COPYRIGHT 2004 IFIS on STN
AN 1978(09):M0801 FSTA
TI Corn flour: reduction of particle size and use for cookies.
AU Badi, S. E. M.
CS Kansas State Univ., Manhattan, Kansas 66506, USA
SO Dissertation Abstracts International, B, (1977), 38 (2) 572: Order No. 77-15997, 76pp.

DT Journal
 LA English
 AB A treatment for reduction of particle size of corn flour without successive grinding (and concomitant starch damage) was developed. Treatment with 0.5% NaHSO₃ and 100% water, with recycling of some fractions, gave 96.5% yield of particles <50 µm; lyophilized samples had smaller particle sizes than air-dried samples. A protein shift was observed in air-classified fractions that had been reduced to small particle size. Test baking showed, unexpectedly, that cookie diameter decreased with particle size and that starch damage was not detrimental to cookie diameter. With certain mill streams cookie diameter increased as a result of the **hydration** and drying treatment. A water soluble component from some samples could increase cookie diameter. Fractionation of the water solubles from treated flour samples by dialysis and ion-exchange chromatography showed that the diameter-increasing factor(s) were in the cationic fraction, which contained mainly amino acids and peptides. **Hydration** of flour increased most amino acids in the water soluble fraction, especially aspartic acid. Baking tests showed that aspartic acid could be partially responsible for cookie diameter increase, but boiled water soluble fraction did not increase cookie diameter, suggesting a role for enzymes. Chocolate chip cookies made from 100% corn flour had a higher off-flavour than those made from soft wheat, but were otherwise similar. Sugar snap cookies made from a blend of corn flour and soft wheat (50:50) were rated as acceptable.

CC M (Cereals and Bakery Products)
 CT BISCUITS; CORN; **FLOURS CEREAL**; PARTICLES; PHYSICAL PROPERTIES; STARCH; COOKIES; CORN STARCH; CORNFLOUR; FLOUR SPECIFIC; REDUCED; SIZE

L4 ANSWER 18 OF 19 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1973(08):M1034 FSTA
 TI Changes in the carbohydrate composition during development and maturation of the wheat and barley kernel.
 AU Cerning, J.; Guilbot, A.
 CS Sta. de Biochimie et Physico-Chimie des Cereales de l'INRA au CERDIA, 91305, Massy, France
 SO Cereal Chemistry, (1973), 50 (2) 220-232, 31 ref.
 DT Journal
 LA English
 AB Change of high-molecular carbohydrate composition (starch, pentosans, crude fibre) and principal alcohol-soluble sugars in developing wheat and barley kernel was studied. Samples were collected from fields 9-49 days after flowering at intervals of 3-4 days, immediately immersed in liquid N₂, freeze-dried, and ground. Carbohydrate analyses were carried out with methods which result in values of good precision and reproducibility. Results are expressed on a 1000-kernel weight basis, which permits one to distinguish between carbohydrates accumulating in the kernel (mainly starch, pentosans, and crude fibre) and those which arise by an intermediate pathway (mainly glucose and sucrose). Results are given as a function of a climatic factor, cumulative daily mean temperature from the point of flowering. Thus it is possible to compare not only 1 **cereal** grown in different yr and various regions but also all cereals among each other. Starch development was essentially identical in the 2 cereals. Pentosans of wheat develop analogously to starch in Joss, but follow evolution of crude fibre in Cappelle. Barley, a covered **cereal**, shows very rapid and parallel accumulation of pentosans and crude fibre. Alcohol-soluble sugars increase in the very early stage of development and then decrease to a more or less constant value. Important phases in formation of carbohydrates become apparent and the relationship between development of these components and kernel **hydration** is discussed.

CC M (Cereals and Bakery Products)
 CT BARLEY; CARBOHYDRATES; WHEAT; KERNEL

L4 ANSWER 19 OF 19 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1969(02):G0053 FSTA
 TI Liquid dextrine lowers cost of protecting cereals, confections.
 AU Strong, B. R.
 CS Clinton Corn Processing Co., Clinton. Iowa 52732, USA
 SO Food Processing, (1968), 29 (8) 32
 DT Journal
 LA English
 AB Liqui-Dex is used as a coating for **cereal**, freeze-dried fruit pellets, nuts etc. and guards against dehydration, **hydration**, discolouration, flavour loss and odour pick-up.
 CC G (Catering, Speciality and Multicomponent Foods)
 CT CEREALS; COATING; DEXTRINS; NUTS; **CEREAL**; DEXTRINE; **FREEZE-DRIED # PELLETS**; FRUIT; LIQUID; **LIQUID # FREEZE-DRIED # PELLETS**

=> s hydration and friability

1597 HYDRATION

157 FRIABILITY

L5 4 HYDRATION AND FRIABILITY

=> d 15 all 1-4

L5 ANSWER 1 OF 4 FSTA COPYRIGHT 2004 IFIS on STN
 AN 2003:G0372 FSTA
 TI Methods of reducing **friability** of cereal products, potato chips, and freeze-dried foods, of increasing bowl life of cereal products, and of delaying rancidity of nuts.
 IN Krochta, J. M.; Soo-Yeun Lee; Trezza, T. A.
 PA Krochta, Davis, CA, USA
 SO United States Patent Application Publication, (2002)
 PI US 2002187230 A1
 PRAI US @@@@-879794 20010611
 DT Patent
 LA English
 AB A method of reducing the **friability** of foods such as cereal products (including ready-to-eat cereals and corn and tortilla chips), potato chips and freeze dried foods is described. It comprises the foods being in contact, but not overhydrated, with water, then drying the food to approx. its original water content. A similar method for delaying rancidity development in nuts is also described, and in its preferred form it causes mild abrasion of the nuts to facilitate **hydration**.
 CC G (Catering, Speciality and Multicomponent Foods)
 CT CEREAL PRODUCTS; CHIPS; DRIED FOODS; NUTS; PATENTS; PROTEINS CEREAL; RANCIDITY; WATER; FREEZE DRIED FOODS; FRIABILINS; POTATO CHIPS

L5 ANSWER 2 OF 4 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1999(05):H0896 FSTA
 TI Barley **hydration** and high diastatic power malt.
 AU Hamilton, G.
 SO Brewer, (1998), 84 (4) 166-170, 4 ref.
 ISSN: 0006-9736
 DT Journal
 LA English
 AB Studies were conducted to assess **hydration** of the endosperm of malting barley in relation to quality of high diastatic power malt for distilling; barleys of the cv. Prisma, Chariot and Delibes were used. Raw barleys were analysed, **hydration** properties were assessed, chit and root counts were determined during malting, and the resulting malts were analysed for **friability**, homogeneity and diastatic power. Malting of the cv. Chariot was compared at 2 malthouses. All the raw barleys were of good malting quality. There was little cv. difference in

endosperm **hydration**, although Delibes showed slightly faster and better water absorption. A 'sink' effect of the barley germ was observed: absorbed water was bound in the embryo region, which delayed **hydration** of the endosperm. High protein levels in the subaleurone layer may delay penetration of water into the endosperm. **Hydration** analysis before kilning was successful in predicting potential **friability**, and may be used to predict quality of the final product. Malt **friability** and homogeneity were greater for Chariot than for Prisma or Delibes. Diastatic power was highest for Delibes, followed by Chariot. Chitting time was greater at one malthouse than at the other, but by the end of germination all samples had produced satisfactory root growth.

CC H (Alcoholic and Non-Alcoholic Beverages)

CT AMYLASES; DISTILLERIES; MALTING BARLEY; MOISTURE CONTENT; DIASTATIC ACTIVITY; **HYDRATION**

L5 ANSWER 3 OF 4 FSTA COPYRIGHT 2004 IFIS on STN

AN 1986(01):G0052 FSTA

TI Effects of process variables on the physical and chemical properties of extrusion cooked soy flour.

AU Alexandridis, N. A.

CS Virginia Polytechnic Inst. & State Univ., Blacksburg, Virginia 24061, USA

SO Dissertation Abstracts International, B, (1985), 45 (7) 1983: Order no. DA8421848, 154pp.

DT Journal

LA English

AB The effects of three process variables, moisture content, screw speed, and barrel temperature on flow rate, texture, final product temperature, product density,

and product moisture content were determined. A new method for **hydration** of soybean flour was used which approx. doubled extrusion flow rates. Improved flow rates significantly affected such extrudate characteristics as final product moisture content, homogeneity, strength, **friability** and product porosity. Flow rates were exclusively a function of screw speed. A critical product temperature of 135° C was identified, where apparent product density declined sharply. Kramer shear press values increased linearly with increasing product temperature and decreasing moisture content. Shear strength of the extrudate was dependent on the degree of cooking as determined by length of residence time and level of temperature. A structural change in the protein-carbohydrate complex was observed at an extrudate temperature of 94° C. Final product moisture content was dependent on initial moisture content and process temperature. A general linear equation was formulated that determines the effects of the independent variables on the dependent ones.

CC G (Catering, Speciality and Multicomponent Foods)

CT EXTRUSION; FLOURS; FLOW; MOISTURE CONTENT; PHYSICAL PROPERTIES; SOY PRODUCTS; TEMPERATURE; BARREL; COOKED; MEAL; PHYSICOCHEMICAL PROPERTIES; SCREW SPEED; SOY FLOUR; SOY MEAL; TEMP.; VARIABLES # COOKED

L5 ANSWER 4 OF 4 FSTA COPYRIGHT 2004 IFIS on STN

AN 1985(03):M0133 FSTA

TI [Biscuit-making quality of soft wheat cv. of the 1983 harvest.]

AU Grebaut, J.

SO Industries des Cereales, (1984), No. 27, 45-52

DT Journal

LA French

AB Studies were conducted on 26 cv. of wheat grown in 7 departments of France in 1983. Tables of data are given for protein content, alveograph characteristics, **hydration** characteristics, dough characteristics, and density, **friability**, development index and shape index of biscuits. Protein contents of the flours were lower than in the previous yr, which favours biscuit quality. The relative merits of the

cv. are discussed; Albatros, Capitole, Beauchamp, Corin, Arcole and
Cocagne were especially suitable for biscuit manufacture.
CC M (Cereals and Bakery Products)
CT BISCUITS; FLOURS CEREAL; WHEAT; BISCUIT-MAKING QUALITY # SOFT; BREED; CV;
FLOUR SPECIFIC; WHEAT FLOUR

=> s cereal and soggy and (rehydrated or rehydration)
23582 CEREAL
45 SOGGY
619 REHYDRATED
1044 REHYDRATION
L6 0 CEREAL AND SOGGY AND (REHYDRATED OR REHYDRATION)

=> s cereal and (rehydrated or rehydration)
23582 CEREAL
619 REHYDRATED
1044 REHYDRATION
L7 64 CEREAL AND (REHYDRATED OR REHYDRATION)

=> d l7 all 1-64.

L7 ANSWER 1 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 2003:M1199 FSTA
TI Cold-rehydrating couscous.
IN Fournier, J. F.
PA Les Produits Zinda Canada Inc.; Les Produits Zinda Canada, Canada
SO Canadian Patent Application, (2002)
PI CA 2323949 A1
PRAI CA @@@@-2323949 20001019
DT Patent
LA French
CC M (Cereals and Bakery Products)
CT **CEREAL PRODUCTS; PATENTS; PROCESSING; COUSCOUS;
REHYDRATION; TITLE**

L7 ANSWER 2 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 2003:M0293 FSTA
TI [Prepared dumpling mix for Bohemian style dumplings and process for its
manufacture.]
IN Werner, B.
PA Bernhard Werner Nahrungsmittel-Produktions- und Handels GmbH; Bernhard
Werner, 01705 Freital, Germany
SO German Federal Republic Patent Application, (2002)
PI DE 10125788 A1
PRAI DE 2001-10125788 20010526
DT Patent
LA German
AB A process for manufacture of a mix for preparation of Bohemian style
dumplings in a microwave oven is described; the mix contains
cereal flour, baking powder, breadcrumbs and seasonings. For
serving, it is **rehydrated** with water, wine or a water/wine
mixture and cooked.
CC M (Cereals and Bakery Products)
CT BAKERY PRODUCTS; PATENTS; BAKERY PRODUCT MIXES; DUMPLINGS

L7 ANSWER 3 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 2001(09):M1115 FSTA
TI Physicochemical, structural and textural properties of tortillas from
extruded instant corn flour supplemented with various types of corn
lipids.
AU Arambula-Villa, G.; Gonzalez-Hernandez, J.; Ordorica-Falomir, C. A.
CS Correspondence (Reprint) address, C. A. Ordorica-Falomir, Maestria en

Alimentos, Fac. de Ciencias Quimico-Biol., Univ. Autonoma de Sinaloa, Mexico. E-mail gearvi(a)sparc.ciateq.conacyt.mx

SO Journal of Cereal Science, (2001), 33 (3) 245-252, 17 ref.
ISSN: 0733-5210

DT Journal

LA English

AB Quality of tortillas is strongly dependent upon physical and chemical interactions occurring among the different components (starch, lipids, fibre and proteins) of corn grains. The physicochemical, rheological, structural and textural properties of masa and tortillas were studied as a function of the concentration and type of corn lipid added. Lipids were extracted from untreated corn flour using various solvents to give a range of different lipid fractions; these were added to extruded instant corn flour (EICF) at concentration ranging from 0.5 to 2%. Flour structure, effective moisture diffusion coefficient, and cooking weight loss were measured, and resulting masa and tortillas were analysed for texture. Results indicated that all types of lipid affected physicochemical and textural properties of EICF, masa and tortillas. Best textural properties were obtained in masa and tortillas prepared using EICF with 0.5% (w/w) of the non-polar, chloroform extracted lipid fraction (lipid fraction III). Based on viscosity and crystallinity data, it was determined that starch granules lose their crystallinity when gelatinized, but retain their capacity for developing viscosity upon **rehydration**.

CC M (Cereals and Bakery Products)

CT BAKERY PRODUCTS; CORN; **FLOURS CEREAL**; LIPIDS; PHYSICAL PROPERTIES; TEXTURE; CORN FLOUR; CORN MASA; PHYSICOCHEMICAL PROPERTIES; STRUCTURE; TORTILLAS

L7 ANSWER 4 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 2001(01):M0061 FSTA

TI Effect of drying lactic fermented uji (an East African sour porridge) on some carboxylic acids.

AU Onyango, C.; Okoth, M. W.; Mbugua, S. K.

CS Kenya Ind. Res. & Dev. Inst., PO Box 30650, Nairobi, Kenya

SO Journal of the Science of Food and Agriculture, (2000), 80 (13) 1854-1858, 17 ref.
ISSN: 0022-5142

DT Journal

LA English

AB Effect of flour substrates and their combinations on carboxylic acids production during fermentation of uji was studied. Losses of these acids as a result of drying the porridge by various systems (sun drying, cabinet drying, drum drying), were also evaluated. Corn, finger millet (FM), cassava and mixtures of corn/FM and cassava/FM (1:1 composites) were mixed with boiled and cooled tap water at a ratio of 2:3 flour:water and spontaneously fermented for 24 h, then inoculated into fresh slurries of each flour, at a rate of 7.5%. Inoculated slurries were fermented at 45°C for 24 h, during which time samples were analysed for pH, total titratable acidity, fixed acidity and carboxylic acid profiles (hexanoic, acetic, formic and propionic acids measured by TLC). Dried uji samples were **rehydrated** before sensory analysis and compared with fermented non-dried samples; 10 panellists used the multiple comparison test to rate flavour of samples. Corn/FM samples showed maximum titratable acidity and pure cassava samples the min. Whilst fermentation reduced pH to around 3.7-4.1, drying had no significant impact, although drying reduced total titratable acidity by up to 60%. DM; propionic, acetic and formic acids were not found in dried samples. Losses of hexanoic acid as a result of drying ranged from 33% in corn to 91% in cassava fermented slurries, but were not significantly influenced by the drying system used. In sensory analyses, no flavour loss was detected as a result of drying.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS; DRYING; FERMENTATION; FERMENTED FOODS; FLAVOUR; ORGANIC ACIDS; CARBOXYLIC ACIDS; UJI**

L7 ANSWER 5 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 2000(09):J1782 FSTA
TI Quality attributes of fermented yam flour supplemented with processed soy flour.
AU Achi, O. K.
CS Dep. of Sci. Lab. Tech., Fed. Polytech., PMB 1037, Idah Kogi State, Nigeria
SO Plant Foods for Human Nutrition, (1999), 54 (2) 151-158, 29 ref.
ISSN: 0921-9668
DT Journal
LA English
AB In an effort to introduce more protein into a traditional West African diet, yam flour (meal) was fortified with 10, 20, 30 or 40% treated soy meal. Treatment involved soaking, blanching, dehulling and fermentation of soybeans prior to milling. Effect of yam fermentation was assessed, together with protein content and functional properties of the soy-yam composite flours. Sensory properties of amala (a popular West African food made from **rehydrated** yam flour) prepared with the soymeal fortified yam flour was also evaluated. Blanching (10 min in boiling water) and subsequent fermentation (24 h) of yams produced flour that was lighter in colour than the unfermented samples. Protein content of the yam-soy composite flour increased from 3.5% in the control (yam flour only) to 19.7% for 40% soy fortification. Water binding capacity increased from 212.6 g/100 g for control to 257.3 g/100 g for the blend with 40% soy meal. However, swelling capacity and solubility were affected adversely with increased soy meal addition as the dough became sticky and soft. There was no significant difference in colour, taste, flavour or overall acceptability of amala prepared with 10 or 20% soymeal fortified yam flour when compared with the control. Use of dough prepared with 20% soy meal may be a possibility for increasing the protein content of yam flour for human consumption.

CC J (Fruits, Vegetables and Nuts)
CT DOUGH; FERMENTATION; FLOURS; **FLOURS CEREAL**; FUNCTIONAL PROPERTIES; PROTEINS; SENSORY PROPERTIES; SOY PRODUCTS; VEGETABLE PRODUCTS; YAMS; AMALA; COMPOSITE FLOURS; SOY MEAL

L7 ANSWER 6 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 2000(06):S0896 FSTA
TI Water activity and Hunter colour values of beef patties extended with samh (Mesembryanthemum forsskalei Hochst) flour.
AU Elgasim, E. A.; Al-Wesali, M. S.
CS Dep. of Food Sci. & Tech., Coll. of Agric. & Food Sci., King Faisal Univ., PO Box 420, Al-Hasa 31982, Saudi Arabia
SO Food Chemistry, (2000), 69 (2) 181-185, 14 ref.
ISSN: 0308-8146
DT Journal
LA English
AB Samh (Mesembryanthemum forsskalei Hochst) is a **cereal** crop growing naturally in northern Saudi Arabia; its seeds are collected by Bedouins and ground to flour for breadmaking. Functional properties of whole samh flour (SF) added to beef patties were evaluated and compared with those of soy protein concentrate (SP). Colour values, a.sub.w and proximate composition were examined in patties made using no additives, or 3.5% **rehydrated** SP, or 10 and 20% **rehydrated** SF, and packaged in foam trays overwrapped with PVC for refrigerated display for up to 5 days at 3°C. SF and SP both significantly reduced moisture of raw patties, the former being more effective than the latter. Ash and fat contents of patties increased with addition of SF and SP. In control patties, a.sub.w decreased with display time, whereas in experimental patties a.sub.w tended to increase, more so with SF at higher levels.

Hunter colour L, a and b values, saturation index and hue angle were determined for all variants of raw patties during storage. Hunter colour values were little altered by additives, whereas saturation index and hue angle were, respectively, reduced and increased by addition of SF and SP. Except for composition, properties were affected by display period as well as by additives.

CC S (Meat, Poultry and Game)

CT BEEF; **CEREAL PRODUCTS**; CEREALS; PHYSICAL PROPERTIES; PROTEIN CONCENTRATES; REFRIGERATION; SOY PROTEINS; BEEF PATTIES; **CEREAL FLOURS**; MESEMBRYANTHEMUM FORSSKALEI; PHYSICOCHEMICAL PROPERTIES; REFRIGERATED STORAGE; SOY PROTEIN CONCENTRATES

L7 ANSWER 7 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1999(11):S1839 FSTA

TI Functional properties of sorghum flour as an extender in ground beef patties.

AU Jen-Chieh Huang; Zayas, J. F.; Bowers, J. A.

CS Correspondence (Reprint) address, J. A. Bowers, Dep. of Foods & Nutr., Kansas State Univ., Manhattan, KS 66506-1407, USA

SO Journal of Food Quality, (1999), 22 (1) 51-61, 15 ref.
ISSN: 0146-9428

DT Journal

LA English

AB Effectiveness of sorghum flour (SF) as an extender for use in ground beef patties was investigated. Patties were formulated with 20% fat ground beef and 2, 4 and 6% SF (10, 20 and 30% as **rehydrated** 1:4 with water) and were analysed for water holding capacity, water retention, fat retention, cooking yield, colour and textural and sensory properties. Patties containing SF had higher pH, greater yield, reduced cooking losses, less shrinkage in diameter, and smaller increases in thickness than those without SF; a sub.w of cooked patties was not affected by addition of SF. Fat and water retention of beef patties increased as the level of SF increased, while Hunter colour a* values (redness) for raw patties decreased as the level of SF increased; a* values for cooked patties were not influenced by level of SF. Shear force and compression and meat aroma and flavour of cooked patties decreased as SF levels increased, while sorghum aroma, flavour and tenderness of cooked patties increased as SF levels increased; juiciness of cooked patties was not affected. It is concluded that patties containing 2% SF had the most favourable characteristics, having the least cooking loss and shrinkage and the highest tenderness with similar colour and meat aroma to all-meat patties. [From En summ.]

CC S (Meat, Poultry and Game)

CT BEEF; **FLOURS CEREAL**; MEAT; MEAT PRODUCTS; PHYSICAL PROPERTIES; SENSORY PROPERTIES; SORGHUM; BEEF PATTIES; FLOUR; MEAT EXTENDERS; PHYSICOCHEMICAL PROPERTIES

L7 ANSWER 8 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1999(02):T0099 FSTA

TI New **cereal** products with health benefits.
Food Ingredients Europe. Conference proceedings 1997.

AU Inglett, G. E.

CS Food Ingredients Europe Symposium; Biopolymer Res. Unit, Nat. Cent. for Agric. Util. Res., ARS, USDA, 1815 N. University St., Peoria, IL 61604, USA

SO (1998), 17-19 ISBN 90-73220-15-7, 22 ref.

DT Conference

LA English

AB A fat replacer and texturizing agent, Z-Trim (Z for zero calories), is described. The process for manufacture of Z-Trim involves disintegration of the cellular structure of low-cost agricultural by-products such as hulls from oats, corn, rice, soybeans or peas, and bran from wheat and corn, using an alkaline shear procedure. The fragments are then purified,

dried and milled to a powder which, on **rehydration**, forms a gell which has a smooth texture and no taste. Smoothness and viscosity could be varied by altering shear time and water temperature, and by co-drying with hydrophilic carbohydrates (OATRIM-5 and guar gum). Z-Trim gels could be used in a variety of foods to give considerable reductions in calorie contents as well as adding beneficial amounts of dietary fibre. [Further presentations from this meeting are covered in electronic formats of the FSTA database and may be traced via the corporate authors (CA) field, under Food Ingredients Europe [Symposium]. See also 1999-Aa180.]

CC T (Additives, Spices and Condiments)

CT BY-PRODUCTS; **CEREAL PRODUCTS**; FAT SUBSTITUTES; TEXTURIZATION; TEXTURIZING AGENTS; Z-TRIM

L7 ANSWER 9 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1998(05):M0539 FSTA

TI Laboratory-made kishk from wheat, oat and barley. I. Production and comparison of chemical and nutritional composition of burghol.

AU Tamime, A. Y.; Muir, D. D.; Barclay, M. N. I.; Khaskheli, M.; McNulty, D.

CS Food Sci. & Tech. Dep., SAC Auchincruive, Ayr KA6 5HW, UK. Fax 0044 1292 525071. E-mail A. Tamime(a)au.sac.ac.uk

SO Food Research International, (1997), 30 (5) 311-317, 27 ref.
ISSN: 0963-9969

DT Journal

LA English

AB Burghol (parboiled cracked **cereal**, usually wheat) is widely used as the **cereal** component of kishk (a dried mixture of fermented milk and **cereal**). Kishk is reconstituted with water and consumed as a hot gruel in regions of the Eastern Mediterranean and the Indian subcontinent. Production of burghol from barley or oats was investigated using processing techniques used for the production of traditional Lebanese (wheat) burghol. Effects of burghol processing (threshing, cleaning, steeping, sundrying followed by **rehydration**, cracking and bran removal) on composition of 3 var. of barley (Pastoral, Camargue, Marinka) and 4 var. of oats (Matra, Dula, Valient, Adamo) were investigated and compared to that of burghol produced from wheat (Salibi var.). Preparation of burghol from oats was complicated by adhesion of the husk to the grain. Significant differences in fibre, mineral and carbohydrate content existed between the products produced from the different cereals, emphasizing the influence of **cereal** type on burghol composition.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS**; CEREALS; DAIRY PRODUCTS; FERMENTED FOODS; PROCESSING; KISHK

L7 ANSWER 10 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1997(07):M0162 FSTA

TI Process effect on couscous quality.

AU Debbouz, A.; Donnelly, B. J.

CS Dep. of Cereal Sci., North Dakota State Univ., Fargo, ND 58102, USA. Fax 701/231-7723

SO Cereal Chemistry, (1996), 73 (6) 668-671, 15 ref.
ISSN: 0009-0352

DT Journal

LA English

AB Commercial and traditional homemade couscous are both produced by the agglomeration process. Each couscous granule represents an aggregate of several semolina particles. Couscous manufactured by this process lacks a definite uniform shape and size. The objective of this study was to produce couscous with more uniform shape and size using extrusion technology. High-temperature short-time twin-screw and low-temperature single-screw extruders were utilized. The extruded and agglomerated couscous were evaluated for colour, water absorption index, water solubility index, degree of starch gelatinization, cooking quality, and

sensory attributes. The twin-screw-extruded couscous was characterized by its shape and size uniformity, its intense yellow colour, and its high degree of starch gelatinization. This product also showed significantly higher water absorption, shorter **rehydration** and cooking times, and better appearance, flavour and overall acceptability than that of the agglomerated couscous (commercial and homemade). The single-screw extruded couscous was also uniformly sized but had excessively long **rehydration** and cooking times due to its dense and compact texture. In addition to its poor cooking quality, this product showed the highest water solubility index and was poorly rated for most of the sensory attributes tested.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS; EXTRUSION; PROCESSING; COUSCOUS**

L7 ANSWER 11 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1997(05):J0110 FSTA

TI Sensory and functional properties of taro flours.

AU Chiun-Chuang Roger Wang; Ruey-Tzz Ju; Yung-Ho Chang

CS Food & Nutr. Dep., Providence Univ., Taichung 43301, Taiwan

SO Food Science, Taiwan, (1996), 23 (6) 854-864, 27 ref.

ISSN: 0253-8997

DT Journal

LA Chinese

SL English

AB Taro flour was produced from *Colocasia esculenta* cv. Betelnut and KS Number 1, by air drying (AD) and drum drying (DD). Sensory properties of taro pastes and fried paste desserts made therefrom were compared, as were functional properties of taro flours and 3 **cereal** flours. In paste, the 2 taro cv. showed similar sensory properties, but in **rehydrated** pastes, processing method caused significant variations. Aroma and flavour were of maximum intensity in control pastes and lowest in AD samples, although the latter had highest stickiness scores. In fried desserts, control and DD samples showed similar flavour retention for cv. Betelnut samples. Density and oil absorption were maximum in control and AD samples, respectively. On comparison of the various flours, oil absorption capacity and emulsion forming capacity were maximum in DD taro flour and wheat flour, respectively, whilst AD taro flours had maximum water holding capacity. [From En summ.]

CC J (Fruits, Vegetables and Nuts)

CT DRYING; FLOURS; FUNCTIONAL PROPERTIES; PHYSICAL PROPERTIES; PROCESSING THERMAL; SENSORY PROPERTIES; TARO; VEGETABLES SPECIFIC; MEAL

L7 ANSWER 12 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1997(04):M0109 FSTA

TI Precooked pasta: tradition and innovation.

AU Pollini, C. M.

CS Pavan Mapimpianti, Via Europa 27, 35015 Galliera Veneta (PD), Italy

SO Italian Food & Beverage Technology, (1996), No. 8, 32, 34

DT Journal

LA English

AB Following consideration of the increasing demand for convenience foods, manufacture of pre-cooked (instant) pasta is discussed with reference to production technology from Pavan Mapimpianti. Technology based on extrusion, cooking in water, drip drying and hot air drying can be used to obtain various shapes of short cut pasta with a moisture content of 12.5% and a degree of starch gelatinization of >95%. The pre-cooked pasta constitutes a semi-finished product that can be introduced into ready-to-eat frozen or pasteurized dishes. The pre-cooked pasta can also be prepared by traditional cooking (3-5 min), sauteeing with or without other ingredients, microwave processing or **rehydration** (e.g for pasta salad).

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS; INSTANT FOODS; PASTA; PROCESSED FOODS**

L7 ANSWER 13 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 1997(04):J0125 FSTA
TI Effect of low temperature-long time blanching on quality of dried sweet potato.
AU Moreno-Perez, L. F.; Gasson-Lara, J. H.; Ortega-Rivas, E.
CS Correspondence (Reprint) address, E. Ortega-Rivas, Biol. Systems Eng., Washington State Univ., Pullman, WA 99164-6120, USA
SO Drying Technology, (1996), 14 (7/8) 1839-1857, 21 ref.
ISSN: 0737-3937
DT Journal
LA English
AB Freshly harvested sweet potato tubers were peeled, diced and slowly blanched at various temperature for various periods, then conventionally blanched at 94°C/3 min and dried at 70 and 85°C for up to 195 min. During this process, enzyme inactivation kinetics, thermal diffusion coefficient and drying rate curves were examined; texture and **rehydration** rate of dried tuber cubes were also determined. A combination of LTLT blanching (65°C/15 min) and gentle drying (70°C/120 min) resulted in a product of good appearance and excellent texture, with acceptable taste, suitable for use in **cereal** formulations (bars, breakfast cereals, etc.) as a fruit replacement. Advantages of this procedure include low energy costs.
CC J (Fruits, Vegetables and Nuts)
CT BLANCHING; COOKING; DRYING; PROCESSING THERMAL; SENSORY PROPERTIES; SWEET POTATOES; TEXTURE; VEGETABLES SPECIFIC

L7 ANSWER 14 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 1996(11):M0126 FSTA
TI [Food product with rapid **rehydration** properties and its manufacture.]
IN Desjardins, J. J.; Dupart, P.
PA Societe des Produits Nestle SA; Nestle, 1800 Vevey, Switzerland
SO Swiss Patent, (1996)
PI CH 686479 A5
PRAI CH 1993-2384 19930811
DT Patent
LA French
AB A rapidly hydrating pasta-type product (thickness 0.1-5 mm) for use in soups, etc. is made from a **cereal**/fat mix with added proteins or carbohydrates; this mix is extrusion cooked then dried to give a product with a sp. gr. of 150-500 g/l. The resulting product floats on the surface of soups, etc. [From En summ.]
CC M (Cereals and Bakery Products)
CT **CEREAL PRODUCTS**; DRIED FOODS; PASTA; PATENTS; PROCESSED FOODS

L7 ANSWER 15 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 1996(06):M0126 FSTA
TI Radial NMR microimaging studies of the **rehydration** of extruded pasta.
AU Hills, B. P.; Babonneau, F.; Quantin, V. M.; Gaudet, F.; Belton, P. S.
CS Inst. of Food Res., Norwich Res. Park, Colney Lane, Norwich NR4 7UA, UK
SO Journal of Food Engineering, (1996), 27 (1) 71-86, 11 ref.
ISSN: 0260-8774
DT Journal
LA English
AB A novel NMR radial microimaging technique was used to follow the **rehydration** of dried pasta. Spaghetti was made from hard wheat, soft wheat and a 50:50 mixture of hard and soft wheat. It was shown that pasta **rehydration** is a non-Fickian diffusion process, where the diffusion coefficient is strongly dependent on the local moisture content and is accompanied by radial and length expansion. Simultaneous diffusion and expansion were modelled numerically for the 3 spaghetti formulations.

Increasing the amount of hard wheat in the pasta shifted the diffusion closer to the limit of case II Fickian diffusion (where there is a sharp moving boundary between the unhydrated glassy states and the **rehydrated** gel). It is concluded that providing relaxation times and/or the water self diffusion coefficient are temperature dependent, magnetic resonance imaging can be used to image temperature distributions. NMR imaging may also be used to clarify the relationship between the quality of raw materials and the quality of a food product.

CC M (Cereals and Bakery Products)

CT ANALYTICAL TECHNIQUES; **CEREAL PRODUCTS**; NUCLEAR MAGNETIC RESONANCE; PASTA; PROCESSING; ANALYSIS; IMAGING; NMR; **REHYDRATION**; SPAGHETTI

L7 ANSWER 16 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1994(09):M0097 FSTA

TI Process for preparing a pasta food product.

IN Taylor, W. I.; Taylor, T.

PA Pastizza's; Pastizza's, St. Louis, MO, USA

SO United States Patent, (1994)

PI US 5283071

PRAI US @@@@-897609 19920610

DT Patent

LA English

AB Pieces of pasta are cooked and mixed with a binding composition, in which the binding agent is either soy protein or an egg white composition (egg whites or **rehydrated** powdered egg whites), at a weight ratio of 40:1 to 10:1. This mixture is shaped and baked to a point at which pasta pieces stick together but remain moist. [From En summ.]

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS**; PASTA; PATENTS

L7 ANSWER 17 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1994(08):M0098 FSTA

TI Influence of raw material on couscous quality.

AU Debbouz, A.; Dick, J. W.; Donnelly, B. J.

CS North Dakota State Univ., Fargo, ND 58105, USA

SO Cereal Foods World, (1994), 39 (4) 231-232, 234-236, 14 ref.

ISSN: 0146-6283

DT Journal

LA English

AB The objectives of this study were to investigate the effect of gluten strength, protein quantity, and semolina granulation on couscous quality. 5 durum wheat cv. [Cando, Renville, Rugby, Vic and Ward] with variable protein contents and gluten strength were selected and milled to provide semolina of different particle size. Couscous was prepared in a traditional manner (hand rolling) from each durum cv. and evaluated for moisture, yield, colour, particle size distribution, water absorption index, water solubility index, cooking quality (cooked weight, **rehydration** time, and stickiness), and sensory attributes. Cv. exhibiting strong mixing characteristics (strong gluten) had an advantage over cv. that had weak mixing properties (weak gluten) for some of the quality parameters, particularly couscous yield and water absorption index. Semolina of fine particle size had an adverse effect on couscous yield and stickiness and a positive effect on couscous brightness and **rehydration** time. At higher protein levels, couscous yield increased and cooking quality improved.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS**; CEREALS; MILLING; PROCESSING; PROTEINS; **PROTEINS CEREAL**; WHEAT; COUSCOUS; SEMOLINA

L7 ANSWER 18 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1994(06):G0012 FSTA

TI Manufacture of freeze-dried breakfast and dessert foods.

AU Vijaya Rao, D.; Radhakrishna, K.; Jayathilakan, K.; Vasundhara, T. S.; Bhagirathi, B.; Gopal Rao, K. R.; Srihari, K. A.; Siddalingaswamy, M.
 CS Defence Food Res. Lab., Mysore 570 011, India
 SO Journal of Food Science and Technology, India, (1994), 31 (1) 40-43, 19 ref.
 ISSN: 0022-1155
 DT Journal
 LA English
 AB Rehydratable breakfast and dessert foods (wheat porridge (dalia), rice pudding (kheer), vanilla custard) were developed using freeze drying; products were assessed for nutritional value, quality and shelf life. The products were found to contain 11.2-12.2% protein and provided 403-447 Kcal/100 g. They were also rich in Ca and P. They were stable for 6-9 months at 37°C when packaged in paper/foil/polyethylene-laminated flexible pouches. The products exhibited a **rehydration** ratio of 1:3. Dalia and kheer could be **rehydrated** satisfactorily at 45 or 70°C, respectively, and in boiling water within 5-20 min. The vanilla custard could be instantly **rehydrated** at 5-45°C, or at higher temperature if required. [From En summ.]
 CC G (Catering, Speciality and Multicomponent Foods)
 CT **CEREAL PRODUCTS; DESSERTS; PROCESSED FOODS; DALIA**

L7 ANSWER 19 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1993(06):R0025 FSTA
 TI Extruder texturized foods from underutilized fish tissue.
 AU Clayton, J. T.; Miscourides, D. N.
 CS Dep. of Food Sci., Univ. of Massachusetts, Amherst, MA 01003, USA
 SO Journal of Aquatic Food Product Technology, (1992), 1 (3/4) 65-89, 15 ref.
 ISSN: 1049-8850
 DT Journal
 LA English
 AB Studies were conducted on extrusion of blends of rice flour with mechanically separated flesh from cod (Gadus morhua) frames. Blends with protein contents of 10-90% were extruded at temperature of 120-180°C, screw speeds of 40-120 rpm and feed moisture contents of 25-65%. Output moisture content, expansion, bulk density, water absorption, integrity after **rehydration**, ultimate tensile strength and ultimate bending strength were determined, and these data were analysed by a response surface procedure. Shelf stable textured food products with a wide range of rheological and nutritional properties could be made. The results are discussed in relation to preparation of commercial products; process conditions for preparation of a protein-enriched snack and a meat extender are presented.
 CC R (Fish and Marine Products)
 CT **CEREAL PRODUCTS; CEREALS; COD; EXTRUSION; FISH; FLOURS**
CEREAL; PROCESSING; RICE; SEA FOODS; FISHES; RICE FLOUR

L7 ANSWER 20 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1993(05):M0131 FSTA
 TI Shelf-stable, filled pasta products.
 IN Kaiser, D. L.; Fioriti, F. R.; Volz, D. C.
 PA Kraft General Foods Inc.; Kraft General Foods, Northfield, IL, USA
 SO United States Patent, (1992)
 PI US 5137737
 PRAI US @@@@-582724 19900914
 DT Patent
 LA English
 AB A shelf-stable, filled, packaged and retort sterilized pasta product, such as lasagna, manicotti and ravioli, is prepared with a filling consisting of 70-95% by weight sour cream, 1-5% by weight of pregelatinized starch and 0.8-5% by weight of uncooked starch. The filling does not involve the use of a gum and so a gum **rehydration** step is not required. The pasta filling may be prepared by any conventional blending technique. The

filling does not discolour or develop a tough texture during the retort process, or when re-heated in a microwave or conventional oven.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS**; FERMENTED CREAM; FERMENTED DAIRY PRODUCTS; PASTA; PATENTS; SOUR CREAM

L7 ANSWER 21 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1992(12):S0084 FSTA

TI [The effects of die temperature and content of wheat flour added on physico-chemical properties of pork extrudate by using a single-screw extruder.]

AU Yoo, I. J.; Jeon, K. H.; Han, O.; Park, D. J.

CS Korea Food Res. Inst., Seoul, Korea Republic

SO Korean Journal of Animal Science [Hanguk Ch'uksan Hakhoe Chi], (1991), 33 (11) 795-800, 14 ref.
ISSN: 0367-5807

DT Journal

LA Korean

SL English

AB This experiment was conducted to understand physicochemical properties of pork extrudate affected by temperature and ratio of wheat flour to pork. The results are summarized as follows. As contents of wheat flour and die temperature were increased, expansion ratio and **rehydration** ratio of pork extrudate increased. L value of pork extrudate increased with increasing wheat flour content and decreased with increasing die temperature during extrusion. The density and break strength of pork extrudate decreased with increasing wheat flour content and die temperature As content of wheat flour was increased, the sensory scores for colour, taste and texture of pork extrudate were improved. The quality of pork extrudate with wheat flour added was optimum when 5 portions of wheat flour were fed to the extruder with 1 portion of pork and extruded at the die temperature of 110°C.

CC S (Meat, Poultry and Game)

CT CEREALS; EXTRUSION; **FLOURS CEREAL**; MEAT; PORK; TEMPERATURE; WHEAT; EXTRUDATES; FLOUR SPECIFIC; TEMP.; WHEAT FLOUR

L7 ANSWER 22 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1992(09):S0023 FSTA

TI [Effects of die temperature and addition of rice flour on the physicochemical properties of meat extrudates.]

AU Yoo, I. J.; Jeon, K. H.; Kim, Y. B.; Park, M. H.

SO Korean Journal of Animal Science [Hanguk Ch'uksan Hakhoe Chi], (1991), 33 (9) 667-672, 18 ref.
ISSN: 0367-5807

DT Journal

LA Korean

SL English

AB Experiments were conducted to assess the effects of die temperature and the rice flour/pork ratio on the physicochemical properties of pork/rice flour extrudates. Samples were prepared with die temperature of 100, 110 and 120°C, and rice flour/pork ratios of 1:1-5:1. Expansion and **rehydration** ratio increased with increasing die temperature and rice flour/pork ratio. L colour value increased with increasing rice flour/pork ratio, but decreased with increasing die temperature Density and breaking strength decreased with increasing rice flour/pork ratio and die temperature Sensory colour and taste values were maximum for samples with a rice flour/pork ratio of 3:1; sensory texture score decreased with increasing rice flour/pork ratio. Overall, a rice flour/pork ratio of 3:1 and die temperature of 110°C were optimal. [From En summ.]

CC S (Meat, Poultry and Game)

CT CEREALS; EXTRUSION; **FLOURS CEREAL**; MEAT; PHYSICAL PROPERTIES; PORK; RICE; EXTRUDATES; FLOUR; FLOUR SPECIFIC; PHYSICOCHEMICAL PROPERTIES

L7 ANSWER 23 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1992(09):M0088 FSTA
 TI A method for the assessment of safe **rehydration** regimes for pasta.
 AU Anderson, W. A.; Goddard, M.; McKirgan, C.; Steels, H.; Cole, M. B.
 CS Unilever Res. Colworth Lab., Colworth House, Sharnbrook, Bedford MK44 1LQ, UK
 SO Letters in Applied Microbiology, (1992), 14 (3) 77-80, 5 ref.
 DT Journal
 LA English
 AB It is well known that bacterial spores are more resistant to dry heat than moist heat. Therefore, in order to ensure the safe application of thermal processes aimed at the destruction of Clostridium botulinum, it is essential that all the ingredients of a food product are fully **rehydrated**. A simple microbiological method, based on the immobilization of spores of known moist heat resistance in a product, was developed to evaluate the processing conditions required to give full **rehydration** of pasta. The method is compared to traditional approaches [such as measurement of a.sub.w and moisture content].
 CC M (Cereals and Bakery Products)
 CT ANALYTICAL TECHNIQUES; **CEREAL PRODUCTS**; FOOD SAFETY; MICROBIOLOGY; PASTA; PROCESSING; RECONSTITUTED FOODS; EVALUATION; PREPARED FOODS; **REHYDRATION**

L7 ANSWER 24 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1992(04):M0125 FSTA
 TI Low temperature extrusion process for quick cooking pasta products.
 IN Wenger, M. L.; Huber, G. R.
 PA Wenger Manufacturing Inc.; Wenger Manufacturing, Sabetha, KS, US
 SO United States Patent, (1991)
 PI US 5059439
 PRAI US @@@@-930155 19861112
 DT Patent
 LA English
 AB Quick cooking pasta products are extruded in a low temperature process by advancing a partially precooked mixture of pasta flour and water along a screw extruder via cooking, venting and forming zones and finally through an extrusion die. Limiting the maximum temperature of the mixture in the extruder to 215°F prevents the formation of burned specks in the final product and enhances the extruded pasta quality by increasing product resistance to overcooking and improving the retention characteristics of the original product. Venting of gases from the mixture during the time that the latter passes between the cooking and the forming zones removes significant amounts of moisture to enable less shear to be imposed on the mixture during the cooking process and to decrease the time required for **rehydration** of the extruded products. A venting device has a rotatable screw for enabling gases to be discharged from the mixture while substantially preventing the escape of the mixture from the extruder barrel.
 CC M (Cereals and Bakery Products)
 CT **CEREAL PRODUCTS**; COOKING; EXTRUSION; PASTA; PATENTS; TEMPERATURE; TEMP.; UNITED STATES OF AMERICA

L7 ANSWER 25 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1992(04):M0014 FSTA
 TI Starch characterization of nixtamalized corn flour.
 AU Gomez, M. H.; Waniska, R. D.; Rooney, L. W.
 CS Cereal Quality Lab., Soil & Crop Sci., Texas A&M Univ., College Station, TX 77843-2474, USA
 SO Cereal Chemistry, (1991), 68 (6) 578-582, 17 ref.
 ISSN: 0009-0352

DT Journal
 LA English
 AB Commercial nixtamalized corn flours used to prepare tortilla and tortilla chips were analysed for particle size distribution, composition, and functionality. Changes in starch crystallinity, solubility, and kernel microstructure were evaluated in commercial samples of raw corn, alkaline-cooked and steeped corn (nixtamal), ground nixtamal (masa), and nixtamalized corn flour (NCF). The coarse, intermediate, and fine particle size fractions of NCF had similar chemical composition and distribution of anatomical parts. Starch in the large particles of NCF was less damaged during grinding and was more soluble after autoclaving and sonication. Starch in intermediate and smaller particle size fractions was more mechanically damaged, gelatinized, and retrograded, as indicated by decreased starch solubility (after autoclaving and sonication). NCF drying, the last thermal operation during processing, caused partial starch gelatinization and retrogradation, decreasing starch crystallinity. Thus, starch functionality was modified during NCF preparation, which negatively affected the rheological characteristics of **rehydrated** NCF; that is, it decreased cohesiveness and plasticity of the NCF and the shelf life of baked products, so that tortillas became stale sooner.

CC M (Cereals and Bakery Products)
 CT CEREALS; CORN; **FLOURS CEREAL**; STARCH; CORN FLOUR; FLOUR SPECIFIC

L7 ANSWER 26 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1991(09):M0047 FSTA
 TI A gene coding for a basic pathogenesis-related (PR-like) protein from Zea mays. Molecular cloning and induction by a fungus (Fusarium moniliforme) in germinating maize seeds.

AU Casacuberta, J. M.; Puigdomenech, P.; Segundo, B. S.
 CS Correspondence (Reprint) address, B. S. Segundo, Dep. de Genetica Molecular, Cent. d'Investigacio i Desenvolupament (CSIC), Jordi Girona Salgado 18, 08034 Barcelona, Spain
 SO Plant Molecular Biology, (1991), 16 (4) 527-536, 36 ref.
 ISSN: 0167-4412

DT Journal
 LA English
 AB Pathogenesis-related proteins (PRs) are plant proteins produced in leaves in response to infection by pathogens including viruses, viroids, fungi and bacteria. Information on the presence of and/or expression of PRs in monocotyledonous plants is scarce. Identification of cDNA and genomic clones coding for a basic form of a protein from germinating maize seeds having a high homology with the group of PR-1 from tobacco is reported. A cDNA library enriched in aleurone-specific sequences was prepared from maize 2 days after germination. 1 clone contained an open reading frame encoding a protein homologous to PR proteins from tomato (p14) and tobacco (PR-1 group). Sequence analysis of the corresponding genomic clone revealed that it was encoded by a single exon. DNA blot hybridization indicated that this PR-like protein is encoded by a single-copy gene in maize. Accumulation of its mRNA increased after **rehydration** of desiccated seeds. A relationship was found between gene expression and infection by a natural pathogen of maize, Fusarium moniliforme. The possible role of this protein as a response mechanism following fungal infection in **cereal** seeds is discussed.

CC M (Cereals and Bakery Products)
 CT CEREALS; CORN; FOOD SAFETY; FUNGI; FUSARIUM; GENE CLONING; GENE EXPRESSION; GENETICS; PROTEINS; **PROTEINS CEREAL**; SEEDS; CLONING TECHNOLOGY; GENES; PATHOGENESIS

L7 ANSWER 27 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1991(07):M0054 FSTA
 TI Color of pregelatinized pasta as influenced by wheat type and selected additives.
 AU Cole, M. E.; Johnson, D. E.; Cole, R. W.; Stone, M. B.

CS USDA-WRRC, 800 Buchanan St., Albany, CA 94710, USA
SO Journal of Food Science, (1991), 56 (2) 488-493, 30 ref.
ISSN: 0022-1147
DT Journal
LA English
AB A high temperature short time, twin-screw extrusion process was utilized to manufacture pregelatinized pasta on a pilot-plant scale. Effects of wheat type and selected additives on colour properties of dry and **rehydrated** pasta products were evaluated by instrumental means. Wheat type most strongly influenced instrumental colour values of pregelatinized pasta. Formulation of pasta with 1.0% disodium phosphate increased saturation index of dry pasta while addition of 5.0% wheat gluten increased lightness index of **rehydrated** pasta. Raising levels of glyceryl monostearate from 0.75 to 2.0% increased lightness of dry and **rehydrated** products.

CC M (Cereals and Bakery Products)
CT ADDITIVES; **CEREAL PRODUCTS**; COLOUR; PASTA; WHEAT

L7 ANSWER 28 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 1991(04):V0112 FSTA
TI [Process for manufacture of a **cereal**-based food, and use of this food.]
Verfahren zur Herstellung eines Lebensmittels aus Getreide und dessen Verwendung.

IN Meyer, B.
PA Ireks-Arkady GmbH; Ireks-Arkady, D-8650 Kulmbach, FRG
SO German Federal Republic Patent Application, (1990)
PI DE 3910374 A1
PRAI DE @@@-3910374 19890331
DT Patent
LA German
AB Grain is steeped and germinated, the total steeping/germinating time being 3-7 days (preferably 5 days for rye, 6 days for wheat). The germinated grain is then heated to 40-70°C (preferably approx. 55°C) for 8-24 h (preferably 10-14 h), without moisture loss, to inactivate enzymes. The resulting grain preparation is then dried under mild conditions. The treated grains have good **rehydration** characteristics, and may be used to improve the flavour, freshness retention and juiciness of bread or other bakery products.

CC V (Patents)
CT BAKERY PRODUCTS; **CEREAL PRODUCTS**; CEREALS; PATENTS

L7 ANSWER 29 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 1990(11):M0168 FSTA
TI Vermicelli from sorghum and soya.
AU Siwawej, S.
CS Dep. of Food Sci. & Tech., Fac. of Agro-Ind., Kasetsart Univ., Bangkok 10900, Thailand
SO Food Australia, (1990), 42 (5) 224-225, 4 ref.
ISSN: 0015-6647
DT Journal
LA English
AB Protein and fat contents, and hence nutritional value, of sorghum vermicelli were increased by inclusion of soy flour. Incorporation of 10, 20 or 30% soy flour gave products of acceptable colour, flavour and texture, as assessed by 50 untrained panelists using 9-point hedonic scales. Incorporation of >30% soy flour improved **rehydration** capacity, but decreased strength of the pasta products. [From En summ.]

CC M (Cereals and Bakery Products)
CT **CEREAL PRODUCTS**; FLOURS; PASTA; SORGHUM; SOY PRODUCTS; SOYBEANS; VEGETABLE PRODUCTS; MEAL; SOY MEAL; VERMICELLI

L7 ANSWER 30 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1990(04):C0026 FSTA
 TI Epidemic cholera in Mali: high mortality and multiple routes of transmission in a famine area.
 AU Tauxe, R. V.; Holmberg, S. D.; Dodin, A.; Wells, J. V.; Blake, P. A.
 CS Enteric Diseases Branch, Div. Bact. Diseases, Cent. for Infectious Disease, Cent. for Disease Control, Atlanta, GA, USA
 SO Epidemiology and Infection, (1988), 100 (2) 279-289, 30 ref.
 ISSN: 0950-2688
 DT Journal
 LA English
 AB During the 1984 cholera epidemic in Mali, 1793 cases and 406 deaths were reported, a death-to-case ratio of 23%. In 4 affected villages, mean clinical attack rate was 1.5, and 29% of affected persons died. In 66% of cases the illness began more than 48 h after the village outbreak began, when supplies from outside the village were potentially available. Deaths occurred because patients failed to seek care or received only limited **rehydration** therapy when they did. Case-control studies identified 2 routes of transmission: drinking water from one well in a village outside the drought area, and eating left-over millet gruel in a drought-affected village. Drought-related scarcity of curdled milk may permit millet gruel to be a vehicle for cholera. Cholera mortality in the Sahel could be greatly reduced by rapid intervention in affected villages, wide distribution of effective **rehydration** materials, and educating the population to seek treatment quickly.
 CC C (Hygiene and Toxicology)
 CT **CEREAL PRODUCTS**; DISEASES; DRINKING WATER; FOOD SAFETY; MILLET; WATER; CHOLERA; GRUEL; MILLETS; WELL WATER

 L7 ANSWER 31 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1989(09):V0064 FSTA
 TI Rice product.
 IN Groesbeck, C. A.; Hsu, J. Y.; Larson, G. J.
 PA Societe des Produits Nestle SA; Nestle SA, Vevey, Switzerland
 SO European Patent Application, (1989)
 PI EP 306655 A1
 PRAI US @@@@-84621 19870812
 DT Patent
 LA English
 AB The rice grains in a precooked rice product requiring ≥ 8 min **rehydration** in boiled, hot water are cooked to a moisture content of 55-75% by weight and then dried at 140-185°C in 2 stages: firstly under stationary conditions to a moisture content of 20-35%, and then under agitated conditions to a moisture content of 3-15%. The product may also be prepared for consumption by microwave cooking.
 CC V (Patents)
 CT **CEREAL PRODUCTS**; MICROWAVES; PATENTS; RICE; PATENT; PRECOOKED; PRODUCTS; RICE PRODUCTS

 L7 ANSWER 32 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1988(06):M0005 FSTA
 TI Microbiological problems associated with **cereal** based foods.
 AU Seiler, D. A. L.
 CS Flour Milling & Baking Res. Ass., Chorleywood WD3 5SH, UK
 SO Food Science & Technology Today, (1988), 2 (1) 37-41
 DT Journal
 LA English
 AB **Cereal** products particularly considered include: flour and other milled products; biscuits and breakfast cereals; dry **cereal** mixes; pasta; intermediate moisture foods; high moisture foods; raw and baked pastry; bread and hotplate goods (e.g. crumpets, pancakes, scones, etc.). The shelf-life of **cereal** products is closely related to their moisture content and equilibrium relative humidity (ERH). Generally low moisture products (biscuits, breakfast cereals, dry mixes, flours,

brans; 2-15% moisture, 15-70% ERH) do not pose significant microbiological problems except on **rehydration** or when containing egg or milk products. Intermediate moisture foods (ERH 70-90%, moisture 20-30%) e.g. fruit cakes, plain cakes, pastries or puddings, are subject to spoilage by moulds and osmophilic yeasts, sometimes arising from fillings such as bakery jams. High moisture goods (ERH >90%, 30-80% moisture) e.g. raw pastry, baked pastry with moist fillings, bread, rolls, and hot plate goods, spoil very quickly and are susceptible to lactic acid bacteria, *Bacillus subtilis*, *B. cereus*, *Staphylococcus aureus*, and many types of yeast and moulds.

CC M (Cereals and Bakery Products)

CT BAKERY PRODUCTS; **CEREAL PRODUCTS**; HUMIDITY; MOISTURE CONTENT; SHELF LIFE; SPOILAGE; EQUILIBRIUM; RH; SHELF-LIFE

L7 ANSWER 33 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1988(01):V0213 FSTA

TI [Food preparation based on durum-wheat semolina which is pretreated, precooked, buttered, sweetened and dehydrated.]

IN Abed, A.

SO French Patent Application, (1987)

PI FR 2587881 A1

PRAI FR 1985-14483 19850927

DT Patent

LA French

AB Semolina dough is lightly kneaded, pieces of uniform size are prepared, steamed, lightly coated in butter and finally powdered with fine-particle size sugar. The product is then dried and packaged in A1 packs. It may be **rehydrated** with hot or cold milk.

CC V (Patents)

CT **CEREAL PRODUCTS**; DOUGH; DRIED FOODS; PASTA; PATENTS; DRIED; PATENT; SEMOLINA; SEMOLINA DOUGH PRODUCTS

L7 ANSWER 34 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1987(02):V0131 FSTA

TI A multiple grain flake for hot **cereal** and method.

IN Karwowski, J.; Ferraro, R. F.

PA Nabisco Brands Inc.

SO European Patent Application, (1986)

PI EP 191676 A2

DT Patent

LA English

AB Grains used for the process include: wheat, rye, oats, barley, rice, corn, buckwheat. They are cut into particles (Number 6 mesh screen) and different types of **cereal** grains mixed, moistened, steamed at 140-210°F, rolled (thickness 0.013 in), tempered for 15-20 min, and baked. The process gives thicker than normal toasted **cereal** flakes of high integrity which will withstand packaging and shipping and can be readily **rehydrated** to give an instant, hot breakfast **cereal**.

CC V (Patents)

CT **CEREAL PRODUCTS**; CEREALS; INSTANT FOODS; PATENTS; TOASTING; BREAKFAST CEREALS; PATENT; **TOASTED CEREAL FLAKES # INSTANT HOT**

L7 ANSWER 35 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1987(02):V0111 FSTA

TI Process for the preparation of multiple grain flaked **cereal**.

IN Karwowski, J.; Ferraro, R. F.

PA Nabisco Brands Inc.

SO United States Patent, (1986)

PI US 4603055

DT Patent

LA English

AB Process for producing a mixed grain instant hot **cereal** product

by cutting different grains using a steel cutting method, mixing the dry grains together, steaming the mixture, rolling the cooked grains on a flaking roller to form flakes, and baking the flakes. The process produces thicker than normal toasted flakes of high flake integrity that withstand packaging, shipping, and **rehydration** cooking. [Grain combinations used include: raw oats, barley and wheat; raw oats, rye grain and wheat; and raw oats, barley, wheat and corn.]

CC V (Patents)

CT **CEREAL PRODUCTS**; GRAIN; INSTANT FOODS; PATENTS; INSTANT HOT MIXED; PATENT

L7 ANSWER 36 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1986(07):V0315 FSTA

TI Process of preparing instant flaked wheat farina.

IN Karwowski, J.

PA Nabisco Brands Inc.

SO United States Patent, (1985)

PI US 4551347

DT Patent

LA English

AB Farina and an effective amount of powdered guar gum are admixed. The homogeneous mixture is saturated with water and tempered, preferably with agitation, to produce a material with uniform moisture. This material is cooked which increases the size of its particles. The average particle size of material is then reduced, the material dried, tempered and then flaked to form a product which may be readily **rehydrated** to produce a food product having the texture, etc., of cooked farina [i.e. a ready-to-eat wheat **cereal**].

CC V (Patents)

CT INSTANT FOODS; PATENTS; STARCH; WHEAT; FARINA; INSTANT FLAKED; PATENT; PRODUCTS; WHEAT FARINA PRODUCTS

L7 ANSWER 37 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1986(01):M0144 FSTA

TI The microstructure of wheat: its development and conversion into bread.

AU Bechtel, D. B.

CS US Grain marketing Res. Lab., USDA, 1515 College Avenue, Manhattan, Kansas 66502, USA

SO Food Microstructure, (1985), 4 (1) 125-133, 33 ref.

DT Journal

LA English

AB Wheat endosperm development has been studied in numerous laboratories. The generalized scheme of protein body formation assembled from these data indicates that storage proteins are initially formed in the rough endoplasmic reticulum (RER). The storage proteins in RER may be processed via the Golgi apparatus into vesicles that enlarge by several mechanisms into membrane-bounded protein bodies. The protein bodies are transported through the cytoplasm to the vacuole where they fuse with the tonoplast and deposit the protein granules into the vacuoles. The protein granules fuse with one another, loose water, and eventually become transformed into the matrix. The starchy endosperm is reduced to small particles of starch and protein during milling. These flour particles are dynamically **rehydrated** during dough formation. The protein forms the major structural network surrounding starch granules in doughs. The framework of bread crumb, however, is of dual composition; the protein network and a newly formed network of gelatinized starch.

CC M (Cereals and Bakery Products)

CT BREAD; DOUGH; ELECTRON MICROSCOPY; **FLOURS CEREAL**; HISTOLOGY; WHEAT; BREAD DOUGH; FLOUR; FLOUR SPECIFIC; MICROSTRUCTURE; WHEAT DOUGH; WHEAT FLOUR

L7 ANSWER 38 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1986(01):F0038 FSTA

TI [Packaging casing.]
 Verpackungshuelle.
 IN Zaschke, G.; Kluge, G.
 PA Pfanni-Werke Otto Eckart KG
 SO German Federal Republic Patent Application, (1985)
 PI DE 3335119 A1
 DT Patent
 LA German
 AB A packaging preferably comprises a deep-drawn plastics shaped shell and a lid. The shell is perforated, to allow water into the contained foods or non-food products. Examples include a 'rice ring'. Rice is filled and sealed into a ring-shaped packaging, and cooked in boiling water for 30 minutes. The packaging is then removed, the lid torn off and the rice inverted onto a plate. Production of 'banana-shaped muesli' (containing dried banana pieces) and a potato product (**rehydrated** and baked) are also described.
 CC F (Packaging)
 CT CASINGS; **CEREAL PRODUCTS**; PACKAGING; POTATOES; RECONSTITUTED FOODS; RICE; 'RICE RING'; BANANA-SHAPED; MUESLI; **REHYDRATED BAKED**

L7 ANSWER 39 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1985(12):M0022 FSTA
 TI Properties of barley for extrusion processing.
 AU Lee, D. S.; Rha, C. K.; Suh, K. B.
 CS Food Res. Inst., AFDC, Banwol, Kyungki-Do, S. Korea
 SO Journal of the Korean Agricultural Chemical Society, (1982), 25 (3) 119-125, 9 ref.
 DT Journal
 LA English
 AB Using piston-type extruder, barley flour was extruded at various processing conditions. The variables used were 3 shear rates (a-parent shear rate 118, 534, 1169 s.sup.-.sup.1), 4 extrusion temperature (90, 120, 150, 180° C) and 3 moisture contents (15, 25, 35%). Rheological properties and the extrudate quality were monitored. Barley flour showed pseudoplastic behavior having an average power law index of 0.28 in the shear rate range used. From the aspects of general appearance, die expansion, density, water uptake, **rehydration** expansion and gelatinization degree of extrudate, 25-35% moisture and 120° C were suitable processing conditions for noodle-like product, and 25% moisture and 150° C for snack or flake product. Moisture content of the extrudate can be reasonably well estimated from energy balance at higher temperature and higher moisture contents.
 CC M (Cereals and Bakery Products)
 CT BARLEY; EXTRUSION; **FLOURS CEREAL**; RHEOLOGICAL PROPERTIES; BARLEY FLOUR; BARLEY FLOUR EXTRUDATE; EXTRUDATE; FLOUR SPECIFIC

L7 ANSWER 40 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1985(05):G0038 FSTA
 TI Uniquely textured products obtained by coextrusion of corn gluten meal and soy flour.
 AU Neumann, P. E.; Jasberg, B. K.; Wall, J. S.; Walker, C. E.
 CS N. Reg. Res. Cent., USDA, Peoria, Illinois 61604, USA
 SO Cereal Chemistry, (1984), 61 (5) 439-445, 21 ref.
 DT Journal
 LA English
 AB Although nutritionally advantageous, the blending of corn and soy proteins in foods is limited by their distinctly different functional properties. Chemically bonding these proteins by altering their molecular conformation and linking them together through disulfide bonds was explored by means of coextrusion. Wet-milled corn gluten or decolorized corn gluten (DCG), (pH 7.0 and 30-35% moisture) was mixed with a similarly hydrated, untoasted, defatted soy flour (DSF) at different proportions and extruded under the

proper conditions to yield textured products. When **rehydrated** in boiling water, DCG:DSF extrudates possessed poultry white meatlike color and unique meatlike texture but had water-holding capacities (WHC) less than that of DSF extrudate. Scanning electron microscopy showed that DCG:DSF extrudates had a more disrupted fiber structure than DSF extrudate. Sequential extraction of protein from DCG, DSF, and 46:54 DCG:DSF extrudate with a series of nonreducing and reducing solvents indicated that intermolecular disulfide bonds were formed during extrusion. Amperometric titration data established that other derivatives of cysteine present in DCG were maintained during coextrusion. Calculated protein efficiency ratios based on in vitro digestibility tests and amino acid analyses for 52:48, 46:54, and 40:60 DCG:DSF extrudates were 1.63, 1.76, and 1.97, resp.

CC G (Catering, Speciality and Multicomponent Foods)
CT CORN; EXTRUSION; FLOURS; **FLOURS CEREAL**; GLUTEN; NUTRITIONAL VALUES; PROTEINS VEGETABLE; SIMULATED FOODS; SOY PRODUCTS; CO-EXTRUSION; CO-EXTRUSION # TEXTURED; CORN GLUTEN MEAL-SOY FLOUR MEAT SUBSTITUTES; FLOUR; MEAL; MEAL-SOY; MEAT SUBSTITUTES; PER; TEXTURED; TEXTURED VEGETABLE PROTEINS

L7 ANSWER 41 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 1985(03):G0050 FSTA
TI New quick-cooking whole-grain foods to be marketed in Australia.
AU Anon.
SO Food Technology in Australia, (1983), 35 (10) 461-462
DT Journal
LA English
AB The White Wings Company has released onto the Australian market a new range of quick-cooking grain products. The grains are treated physically to induce numerous small fissures in them through which water can quickly penetrate to effect rapid **rehydration**. The easy-to-use grain foods considered are: seasoned wheat; wheat porridge; wheat extenders for meats; quick-cooking brown rice; flavoured rices; dessert rices; corn; and soybeans.

CC G (Catering, Speciality and Multicomponent Foods)
CT **CEREAL PRODUCTS**; COOKING; GRAIN; MARKETING; SOYBEANS; AUSTRALIA; **CEREAL GRAIN PRODUCTS**; QUICK-COOKING

L7 ANSWER 42 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 1985(02):S0262 FSTA
TI Emulsion and storage stabilities of emulsions incorporating mechanically deboned poultry meat and various soy flours.
AU Thompson, L. D.; Janky, D. M.; Arafa, A. S.
CS Dep. of Poultry Sci., Univ. of Florida, Gainesville, Florida 32611, USA
SO Journal of Food Science, (1984), 49 (5) 1358-1362
DT Journal
LA English
AB The stability of emulsions formulated with mechanically deboned poultry in combination with various levels (10, 15, 20, and 25%) of **rehydrated** vegetable protein flour (VPF), 50% protein; soy concentrate flour (SCF), 70% protein; or soy isolate flour (SIF), 90% protein were determined. VPF emulsions had significantly better emulsion stability than those with SCF or SIF. Flour type had no effect on storage stability (2-thiobarbituric acid values, tensile strength, dominant wavelength, or sensory evaluation); however, SIF emulsions had significantly higher microbiological counts than emulsions incorporating VPF or SCF. **Rehydrated** flour level had no effect on stability with the exception of higher tensile strength values at lower **rehydrated** flour levels.

CC S (Meat, Poultry and Game)
CT EMULSIONS; **FLOURS CEREAL**; MEAT PRODUCTS; MEAT SPECIFIC; POULTRY; POULTRY MEAT; SOY PRODUCTS; SOY PROTEINS; STABILITY; FLOUR; MEAT EMULSIONS; MECHANICALLY BONED; POULTRY MEAT EMULSIONS

L7 ANSWER 43 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1983(10):G0719 FSTA
 TI Food drying: Proceedings of a workshop held at Edmonton Alberta, 6-9 July 1981.
 AU Yaciuk, G. (Editor); International Development Research Centre [Food Drying Symposium]; Lastreto G., C.; Cooke, R.; Campos S., A.; Andales, S. C.; Ba, A.; Banzet, C.; Degbe, J. M.; Carpio, E. V.; Olhagaray, J. M.; Bassey, M. W.; Koh, H. K.; Chung, C. J.; Singhagajen, S.; Garcia, R.; Calzada, J. F.; Menchu, J. F.; Rolz, C.; Sjachputra, -.
 CS International Development Research Centre; 10454 Whyte Avenue, Edmonton, Alberta, Canada
 SO International Development Research Centre Monographs, (1982), IDRC-195e, 104pp. ISBN 0-88936-333-1, many ref.
 DT Conference
 LA English
 AB Papers presented at the workshop held in Edmonton, Alberta, on 6-9 July 1981, cover the most important areas in the design and operation of a drying system i.e. drying requirements, consumer acceptance, heat and mass transfer, and heat sources. Within drying requirements, the need for drying the product is discussed as well as drying times and rates, sample preparation, quality changes during drying, **rehydration** problems, and problems with storage of the dried product. Papers presented include: Consumer acceptance of dehydrated banana weaning food in Costa Rica, by C. Lastreto G., R. Cooke & A. Campos S. (pp. 40-46, 6 reference). Drying of **cereal** grains in the Philippines, by S. C. Andales (pp. 51-60, 5 reference). Drying onions in Niger, by A. Ba, C. Banzet & J. M. Degbe (pp. 61-62). Drying fish in the Philippines, by E. V. Carpio (pp. 63-70, 15 reference). Drying grapes in northern Chile, by J. M. Olhagaray (pp. 71-72). Solar energy as a heat source in crop drying in Sierra Leone, by M. W. Bassey (pp. 73-80, 12 reference). Solar and natural air drying of rough rice in Korea, by H. K. Koh & C. J. Chung (pp. 81-88, 3 reference). Farm grain dryer - Thailand, by S. Singhagajen (pp. 89-93). Economic evaluation of alternative energy sources for coffee bean drying, by R. Garcia, J. F. Calzada, J. F. Menchu & C. Rolz (pp. 94-98, 2 reference). Dryers for Cooperatives for food production in Indonesia, by -. Sjachputra (pp. 99-101). A further 7 papers are abstracted separately and will appear in the author index under International Development Research Centre [Food Drying Symposium].
 CC G (Catering, Speciality and Multicomponent Foods)
 CT BOOKS; CONFERENCE PROCEEDINGS; DRYING; BOOK; FOODS; PROCEEDINGS

L7 ANSWER 44 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1983(06):G0436 FSTA
 TI Cheese analog contains protein from four sources - dairy, oilseed, **cereal**, leaf.
 AU Anon.
 SO Food Processing, (1981), 42 (11) 28-29
 DT Journal
 LA English
 AB An imitation Mozzarella cheese is under development which uses as protein sources 25% each of casein, soy flour, wheat gluten and lucerne leaf protein. The goal of the research programme is development of a complete non-dairy imitation cheese. In addition, a dehydrated non-fat Mozzarella has been produced from skim milk. On **rehydration** with milk or water a cheese of controlled consistency is available for use in formulated foods or as a topping.
 CC G (Catering, Speciality and Multicomponent Foods)
 CT CHEESE; CHEESE VARIETIES; DRIED FOODS; MILK; PROTEIN PRODUCTS; SIMULATED FOODS; CHEESES SPECIFIC; DRIED NON-FAT; DRIED NON-FAT MOZZARELLA; MOZZARELLA; MOZZARELLA CHEESE; PROTEIN SOURCES # IMITATION MOZZARELLA; SKIM MILK; SKIM-MILK

L7 ANSWER 45 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1982(11):M1391 FSTA
 TI [Fast-cooking **cereal**-based products and their preparation.]
 IN Gosselin, L. A.; Bethencourt, M. N.
 PA Buitoni
 SO French Patent Application, (1981)
 PI FR 2474831
 DT Patent
 LA French
 AB Products, such as macaroni, which may be **rehydrated** and consumed a few min. after the addition of boiling water are described, in which gelatinization of the starch has been carried out using steam under pressure. The dough is divided by extrusion or rolling into pieces having a relatively small wall thickness. Before steam treatment, the surface of the product is dried to stabilize its structure and to prevent sticking, giving a product residual humidity of 20-35% by weight; the gelatinization treatment is then carried out at 100-135° C for 4-15 min, after which the product is dried to 13% by weight moisture.
 CC M (Cereals and Bakery Products)
 CT **CEREAL PRODUCTS**; COOKING; GELATION; PASTA; PATENTS; PROCESSING; STARCH; FAST-COOKING; MACARONI; PATENT

L7 ANSWER 46 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1982(11):J1666 FSTA
 TI [Technology and quality control of potato dumpling flours and textural properties of the potato dumplings.]
 Wissensstand bezüglich der Technologie und Qualitätskontrolle von Kartoffelknödelmehlen sowie der texturalen Eigenschaften von Kartoffelknödeln.
 AU Bergthaller, W.; Schaller, A.
 CS Inst. fuer Staerke- & Kartoffeltech., Bundesforschungsanstalt fuer Getreide- & Kartoffelverarbeitung, Detmold, Federal Republic of Germany
 SO Confructa, (1980), 25 (5/6) 181-205, 182 ref.
 DT General Review
 LA German
 SL English
 AB Aspects of the topic considered are: economical importance of potato dumpling flours; types of potato dumpling flours; production and composition of potato dumpling flours; dehydrated potatoes (raw material, processing, pretreatment, blanching, drying); quality criteria for ground dehydrated potatoes (general aspects, connections of quality criteria, **rehydration** capacity); starch as a binding agent (general aspects, potato starch, maize starch, wheat starch); swelling and gelatinization of starch; and textural properties of potato dumplings (cutting firmness, and deformation behaviour).
 CC J (Fruits, Vegetables and Nuts)
 CT BAKERY PRODUCTS; FLOURS; **FLOURS CEREAL**; POTATOES; REVIEWS; TEXTURE; DUMPLING; DUMPLINGS; FLOUR; MEAL; POTATO; POTATO DUMPLING FLOUR; POTATO DUMPLINGS; REVIEW; TECHNOLOGY; TEXTURAL

L7 ANSWER 47 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1982(02):J0223 FSTA
 TI Pilot plant production of dehulled mungbean.
 AU Guerrero, A. C.; Abdon, I. C.; Capanzana, M. V.; Gonzales, J. G.; Yadao, A. V.
 CS Food Res. Div., Food & Nutr. Res. Inst., NSDB, Manila, Philippines
 SO Philippine Journal of Nutrition, (1980), 33 (2) 96-107, 11 ref.
 DT Journal
 LA English
 AB Mung bean (*Vigna radiata* L. Wilzeck) were screen-classified into oversized and intermediate sized bans to facilitate dehulling in a Parpana mill after controlled water soaking and subsequent drying in (i) LP-gas heated forced draft oven dryer and (ii) fluidized bed dryer. Dehulled pre-cooked

mung bean grits can also be produced with the same process by steaming the water-soaked mungbeans prior to drying in a fluidized bed dryer. The result of the pilot plant study showed that the production cost of dehulled uncooked mungbean grits varied from P9.08/kg with (i) to P8.57 with (ii). The production cost of dehulled pre-cooked mungbean grits was calculated at P8.89/kg. The resulting production costs exclude packaging cost and the calculations were based on given assumed market values for the dehulling by-products. The production cost of dehulled uncooked mungbean grits can be reduced to P7.74/kg if the dehulling operation is continuous using a commercial size basket centrifuge and 2 fluidized bed dryers with drying cart capacity of 40 kg **rehydrated** mung beans per batch for each dryer.

CC J (Fruits, Vegetables and Nuts)

CT **CEREAL PRODUCTS; COSTS; ECONOMICS; LEGUMES; ASIA; DEHULLED UNCOOKED; GRITS; MUNG BEAN; MUNG BEAN GRITS; PHILIPPINES; PRODUCTION**

L7 ANSWER 48 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1980(06):M0712 FSTA

TI [Industrial glutens and their applications in milling.]

AU Laniresse, P.; Mazerand, C.

SO Techniques des Industries Cerealieres, (1978), No. 165, 3-7; No. 167, 3-8

DT Journal

LA French

AB Aspects discussed include: utilization of added gluten in dietetic products, and for improvement of the baking characteristics of low-gluten flours; justification of the use of added vital gluten; the chemical composition and structure of proteins in general; characteristics of wheat proteins; distribution of gluten and other constituents within the grain; industrial preparation of gluten (with reference to dough preparation, washing starch out of the dough, and drying of the resulting gluten); the importance of raw material quality and drying conditions for the quality of the gluten; and quality control and testing (with reference to determination of

the chemical composition, **rehydration** capacity, Berliner index and Chopin Alveograph characteristics).

CC M (Cereals and Bakery Products)

CT DIETETIC FOODS; **FLOURS CEREAL**; GLUTEN; WHEAT; FLOUR SPECIFIC; USE IN DIETETIC FOODS; USE IN WHEAT FLOUR; WHEAT FLOUR

L7 ANSWER 49 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1980(04):S0662 FSTA

TI Utilization of texturized peanut grits in frankfurters.

AU Joseph, A. L.; Berry, B. W.; Wells, L. H.; Wagner, S. B.; Maga, J. A.; Kylen, A. M.

CS Dep. of Anim. Sci., Colorado State Univ., Fort Collins, Colorado 80523, USA

SO Peanut Science, (1978), 5 (2) 61-64, 18 ref.

DT Journal

LA English

AB Texturized groundnut grits were substituted at 0, 15 and 30% levels on a **rehydrated** basis for beef trimmings in the manufacture of frankfurters. Similar processing characteristics (peelability, cookout losses) were noted between the treatments. Frankfurters processed with 30% groundnut grits exhibited higher incidence of undesirable flavour, greater tenderness and lighter colour than the control when evaluated by a trained sensory panel. Regardless of treatment, broiling and microwave cookery produced greater Precision Penetrometer penetration of cross-sectional slices than when frankfurters were not cooked prior to testing. Compression of the outer surfaces of frankfurters with the Precision Penetrometer indicated a softening effect when broiling and microwave cookery were used vs. no cooking only in the 15% groundnut grit treatment. No explanation can be provided for this result. The 15% groundnut grit formulation was the only one to display a significant ($P > 0.05$) increase

in aerobic bacterial counts between 0 and 30 days of storage. The results from this study indicate that elevated levels of texturized groundnut grits can be successfully incorporated into frankfurters from sensory, physical and microbial standpoints.

CC S (Meat, Poultry and Game)

CT **CEREAL PRODUCTS**; FRANKFURTERS; PEANUTS; PROTEINS VEGETABLE;
GRITS; GROUNDNUTS; TEXTURED VEGETABLE PROTEINS; TEXTURIZED GROUNDNUT

L7 ANSWER 50 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1980(03):G0144 FSTA

TI Hydrating and packaging textured vegetable protein.

PA Cadbury Typhoo Ltd.

SO UK Patent Application, (1979)

PI GB 2006606 A

DT Patent

LA English

AB A shaped body of comminuted, partially hydrated, textured vegetable protein (preferably along with **rehydrated** vegetable, **cereal** binder, fat and other additives) is described, having a particle size such as to simulate comminuted meat and packaged in a container together with a quantity of water which will be totally absorbed.

CC G (Catering, Speciality and Multicomponent Foods)

CT CONTAINERS; MOISTURE CONTENT; PATENTS; PROTEINS VEGETABLE; RECONSTITUTED
FOODS; SIMULATED FOODS; CONTAINERIZED; HYDRATION; MEAT ANALOGUES; PATENT;
TEXTURED VEGETABLE PROTEINS; TVP MEAT ANALOGUES

L7 ANSWER 51 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1978(11):M1025 FSTA

TI Patterns of wheat gluten proteins in scanning electron microscope.

AU Kaczkowski, J.; Kocon, J.; Serwatowska, J.; Zawistowska, U.

CS Zaklad Biochemii, Inst. Fizjologii Roslin, Rakowiecka 26/30, 02-528
Warsaw, Poland

SO Bulletin de l'Academie Polonaise des Sciences, Sciences Biologiques,
(1978), 26 (3) 141-143, 6 ref.

DT Journal

LA English

SL Russian

AB Proteins were extracted under mild conditions from flours of 60% extraction obtained from wheat lines 689/74 and 1347/74 of IHAR origin. Gluten was separated by the method of Coates and Simmonds [**Cereal** Chemistry, 38, (1961), 256] and glutenin by the method of Jankiewicz and Pomeranz [Journal of the Science of Food and Agriculture 16 (1965), 644]. Scanning electron micrographs of the gluten and glutenin obtained are presented, and show their globular structure, as well as significant influence of mechanical factors on their structure causing their deformation or disaggregation, a significant factor in the build up of dough structure. Dehydration of glutenin followed by **rehydration** destroyed the globular structure.

CC M (Cereals and Bakery Products)

CT ELECTRON MICROSCOPY; GLUTEN; PROTEINS; **PROTEINS CEREAL**; WHEAT;
SCANNING ELECTRON MICROSCOPY; SEM; WHEAT GLUTEN; WHEAT GLUTEN PROTEINS

L7 ANSWER 52 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1977(12):R0634 FSTA

TI A cake or a steak from a fish base.

AU Anon.

SO Fishing News International, (1977), 16 (8) 69-70

DT Journal

LA English

AB Topics discussed are the conversion of fish muscle into functional protein concentrates, isolates and derivatives with excellent emulsifying properties and wide applications in food processing; drum-drying of minced

fish muscle plus 1% salt and 0.5% sodium tripolyphosphate, with subsequent pelleting for easier handling; advantages of drum-drying fish muscle with **cereal** products; the potential of drum-dried fish protein (DDFP), which has excellent **rehydration** and water-holding properties, as a meat extender and in reformed and processed products; and costs of DFPF.

CC R (Fish and Marine Products)

CT CONTAINERS; DRIED FOODS; DRYING; MEAT; PROTEIN CONCENTRATES; PROTEINS ANIMAL; DRIED; DRUMS; FISH (PROCESSING); FISH MUSCLES; FISH PROTEIN CONCENTRATES; FISH PROTEINS; FPC; MUSCLES; PROTEINS (UNCONVENTIONAL)

L7 ANSWER 53 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1977(12):G0912 FSTA

TI Yam (*Dioscorea* spp.) flour fortification with soy flour.

AU Collins, J. L.; Falasinnu, G. A.

CS Dep. of Food Tech. & Sci., Univ. of Tennessee, Knoxville, Tennessee 37916, USA

SO Journal of Food Science, (1977), 42 (3) 821-823, 22 ref.

DT Journal

LA English

AB Yam flour was fortified with soy flour, **rehydrated** to a doughy consistency, and tested for resistance to extrusion, colour and taste panel preference. The food product was similar to pounded yam 'fufu' which is popular in W. Africa. The protein content was 1.25% (yam flour control) and 5 or 10% for yam-soy flour dry mixtures. Addition of soy flour reduced consistency and increased stickiness; lowering the proportion of water in samples containing soy flour produced samples similar to the control. Soy flour made the samples darker, less red and more yellow. Students from W. Africa evaluated samples for appearance-kinaesthetic quality and eating quality. The panel did not prefer one sample to another. The mean score of all samples was slightly above 'liked moderately'. Thus, this yam food may be fortified to 10% protein (dry weight basis) with soy flour without reducing palatability. In the **rehydrated** product as eaten, the percentage protein in the control was 0.31; in the 5% protein sample, 1.48; and in the 10% protein sample, 3.38.

CC G (Catering, Speciality and Multicomponent Foods)

CT CASSAVA; FERMENTED FOODS; FLOURS; **FLOURS CEREAL**; FOOD ENRICHMENT; PROTEINS; SENSORY ANALYSIS; SOY PRODUCTS; SOY PROTEINS; YAMS; FLOUR; FLOUR (SPECIFIC); FORTIFICATION; FORTIFIED; FUFU; ORGANOLEPTIC EVALUATION; PROTEINS (UNCONVENTIONAL); SOY; SOY FLOUR; SOY MEAL; YAM; YAM FLOUR; YAM FUFU

L7 ANSWER 54 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1975(07):G0414 FSTA

TI [Extrusion of soy protein, and measurement of the texture of the extruded product.]

AU Ven, B. L. van der

CS Unilever Res., Duiven, Zevenaar, Netherlands

SO Voeding, (1975), 36 (3) 149-156

DT Journal

LA Dutch

AB Aspects considered in this discussion of manufacture of textured soy protein products by extrusion processing of defatted soy flour include: the basic principles of the extrusion process; patented processes; the chemical basis of texturizing of soy flour products; methods for evaluation of the texture of the product (measurement of the hardness or the **rehydration** characteristics); the relationship between organoleptically-evaluated texture and objectively-measured hardness; the mechanism of **rehydration** of textured soy protein; effects of the extrusion temperature on the **rehydration** characteristics of the product; and the dependence of the min. extrusion temperature on the fat and moisture content of the soy flour dough.

CC G (Catering, Speciality and Multicomponent Foods)

CT ANALYTICAL TECHNIQUES; EXTRUSION; FLOURS; **FLOURS CEREAL**;

PROCESSING; PROTEIN PRODUCTS; PROTEINS; PROTEINS VEGETABLE; SOY PRODUCTS;
SOY PROTEINS; SOYBEANS; TEXTURE; DEFATTED; EVALUATION; FLOUR; FLOUR
(SPECIFIC); RECONSTITUTION; **REHYDRATION**; SOY; SOY FLOUR; SOY
MEAL; SOY PROTEIN PRODUCTS; TEXTURED; TEXTURED VEGETABLE PROTEINS

L7 ANSWER 55 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1975(06):M0702 FSTA

TI Protein fortified **cereal**.

IN Malzahn, W. R.

PA Ralston Purina Co.

SO United States Patent, (1974)

PI US 3852491

DT Patent

LA English

AB In a process for the production of a puffed protein-fortified **cereal** product, the fortifying protein is uniformly dispersed within the puffed structure to improve palatability and **rehydration** characteristics.

CC M (Cereals and Bakery Products)

CT **CEREAL PRODUCTS**; PATENTS; PROTEINS; PATENT; PUFFED # FORTIFIED;
UNITED STATES OF AMERICA; USA

L7 ANSWER 56 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1974(05):G0265 FSTA

TI [A contribution to solving the problem of malnutrition in children.]

AU Suberbie, F.; Tello, F.; Guzman, L.; Rocha, R.; Villasenor, J. P.

SO Tecnologia de Alimentos, (1973), 8 (4) 171-179, 12 ref.

DT Journal

LA Spanish

AB Nutritional analyses and hospital trials are reported for a locally-formulated infant food of low cost and high protein content (20%), prepared from soy meal, hydrolysed **cereal** solids, dextrose and fructose, malt extract, minerals and vitamins. The mixture, a white powder with a characteristic odour and slightly sweet taste, was readily **rehydrated** to a 15% suspension ready for immediate feeding. Results of hospital trials were very satisfactory; the food was well accepted by infants and was particularly useful in providing adequate nutrition for infants not able to consume milk.

CC G (Catering, Speciality and Multicomponent Foods)

CT CONSUMER RESPONSE; INFANT FOODS; ACCEPTABILITY; INFANT FOOD; NEW

L7 ANSWER 57 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1972(04):M0481 FSTA

TI Cook-in-the-bowl-**cereal**.

IN Spring, F. E., Jr.

PA Ralston Purina Co.

SO United States Patent, (1971)

PI US 3620761

DT Patent

LA English

AB A specific milled fraction of grain is flaked to a thickness of 0.007-0.008 in, to yield flakes capable of rapid **rehydration** in boiling water and useful in cook-in-the bowl cereals.

CC M (Cereals and Bakery Products)

CT CEREALS; COOKING; FLAKING; PROCESSING; COOK; COOK-IN-BOWL; FLAKED;
RECONSTITUTION; **REHYDRATION**; CEREALS ; FLAKING

L7 ANSWER 58 OF 64 FSTA COPYRIGHT 2004 IFIS on STN

AN 1972(04):M0480 FSTA

TI Cook-in-the-bowl **cereal**.

IN Steeg, M. A. ver, Jr., Spring, F. E., Jr.

PA Ralston Purina Co.

SO United States Patent, (1971)

PI US 3620760
 DT Patent
 LA English
 AB A specific milled fraction of grain is flaked to a thickness of 0.010-0.012 in, to yield flakes capable of rapid **rehydration** in boiling water and useful in cook-in-the-bowl cereals.
 CC M (Cereals and Bakery Products)
 CT CEREALS; COOKING; FLAKING; PROCESSING; **CEREAL**; COOK; COOK-IN-BOWL; FLAKED; RECONSTITUTION; **REHYDRATION**; FLAKING

L7 ANSWER 59 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1972(02):G0068 FSTA
 TI [Instant food concentrates.]
 AU Burakov, Yu. N.; Perseverzeva, R. D.; Gorbunova, T. N.; Karetnaya, L. V.
 CS Vses. Nauchno-issled. Inst. Konservnoi i Ovoshchesushil'noi Promyshlennosti, USSR
 SO Konservnaya i Ovoshchesushil'naya Promyshlennost', (1971), 1971 (1) 14-15
 DT Journal
 LA Russian
 AB National Res. Inst. of Canning and Food-drying Ind. developed, in 1967-70, a process for preparing new dried concentrate of instant pasty foods. Formulae of the following foods are presented: beef with beans, beef with rice and mushrooms, beef with peas and groats puree, rice with dried apricots, grapes and apples. The mixture of constituents (exclusive of fats) is autoclaved for 40-45 min until a paste-like consistency is obtained (75-77.5% moisture content, or, in beef with puree 57-59% moisture content). The mixture is then roller dried (steam pressure 392.4-490.5 kN/m.sup.2) 3.1-7.3% of moisture. Only then is melted fat added to the mixture, which is well stirred prior to passing on to a press where briks are made (final moisture 4.3-6.3%). The food concentrate briks are then vacuum backed in polyethylene-lined foils. Concentrates are **rehydrated** in cold or hot water for 1-2 min. 100 g of the concentrate give 416-495 kcal. 18 months storage at temperature of -20°C and RH of 65-70% did not impair the final quality of the product.
 CC G (Catering, Speciality and Multicomponent Foods)
 CT ALUMINIUM; APPLES; APRICOTS; BEANS; BEEF; **CEREAL PRODUCTS**; DRIED FOODS; DRYING; FATS; FUNGI EDIBLE; GRAPES; LAMINATES; OATS; PACKAGING; PACKS; PASTES; PEAS; POLYETHYLENE; PROCESSING; RICE; SHELF LIFE; STORAGE; AL; FOIL; FOIL-POLYETHYLENE; GROATS; KEEPING QUALITY; LAMINATE; MUSHROOMS; RECONSTITUTION; **REHYDRATION**; APPLES ; APRICOTS ; BEANS ; BEEF ; DRYING ; FATS ; FOIL ; GRAPES ; KEEPING QUALITY ; MUSHROOMS ; PACKAGING ; PASTES ; PEAS ; POLYETHYLENE ; RICE ; STORAGE

L7 ANSWER 60 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1971(03):M0375 FSTA
 TI Puffed **cereal** product.
 IN Vollink, W. L.; Ver Steeg, M. A.
 PA General Foods Corp.
 SO Canadian Patent, (1970)
 PI CA 845073
 DT Patent
 LA English
 AB 1.5-20% by weight liquified fat of mp ≤125°F is applied to the surface of puffed **cereal** (e.g. by spraying) prior to toasting to yield a product having improved crispness upon **rehydration**.
 CC M (Cereals and Bakery Products)
 CT CEREALS; FATS; PROCESSING; TEXTURE; TOASTING; CRISPNESS; FAT; PUFFED # LIQUIFIED # BEFORE; PUFFED # UPON; RECONSTITUTION; **REHYDRATION**

L7 ANSWER 61 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1971(02):M0190 FSTA
 TI [Instant **cereal** products.]
 Instant-Getreideprodukte.

IN Gralak, B. G.; Hyldon, R. G.
PA Quaker Oats Co.
SO West German Patent Application, (1969)
PI DE 1917550
DT Patent
LA German
AB Grain, such as barley, maize, rice or wheat, is denatured by heat-moisture treatment. 0.1-10.0 parts by weight of a thickening agent, 50-300 parts water and 90-100.0 parts denatured grain are mixed together with a fruit ingredient which can be 4.5-40 parts preserves, 4.5-40 parts fruit juice, or 10-100 parts fruit pulp. The mixture is then cooked, forming a coating 0.25-0.64 mm thick and having a moisture content of 8% by weight on an internally heated rotary drum dryer, the cooking being sufficient to reduce the moisture content to <10% by weight. The cooked product is then comminuted to produce an aromatized instant **cereal** product which can be **rehydrated** and which has excellent aromatic and quality characteristics. Further additives, e.g. vitamins and antioxidants, can be added either during the mixing stage prior to cooking, or to the product after comminution. To produce an enriched, aromatized product, dried milk SNF or soya bean proteins are added in a quantity giving an end protein content of 10-20% by weight.

CC M (Cereals and Bakery Products)
CT ANTIOXIDANTS; AROMA; BARLEY; CEREALS; COMMINUTION; COOKING; CORN; DRYING; FRUIT JUICES; MILK; PRESERVES; PROCESSING; RICE; SOLIDS; SOYBEANS; VITAMINS; WHEAT; AGENT; **CEREAL**; FRUIT; FRUIT (PROCESSING); FRUIT JUICE; INSTANT; JUICE; MAIZE; PRESERVE; PRODUCT; PROTEIN; PROTEINS (UNCONVENTIONAL); SMELL; SNF; SOYBEAN; THICKENING

L7 ANSWER 62 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 1971(02):J0087 FSTA
TI [Method for producing flaked dried fruits and vegetables.]
Verfahren zur Herstellung von getrockneten Fruechten und Gemuesen in Flockenform.

IN Roberts, R. L.; Faulkner, R. E.
PA Vacu-Dey Co.
SO West German Patent Application, (1969)
PI DE 1291187
DT Patent
LA German
AB Pieces having surface area of $\leq 9.6 \text{ cm}^2$ are produced from dried fruit or vegetables by cutting or slicing, care being taken not to destroy their cell structure. These pieces are softened by heating and rolled into flakes having a compressed but intact cell structure. The flakes, which on **rehydration** regain their original shape and cell size, have preferably a thickness of 0.25-1.5 mm. Dried fruit, such as apples (washed, peeled, cored, split and dried), having a moisture content <5% by weight are preferably used as a starting material. Carrots, green peppers and beans may be similarly processed. The final product has an appearance similar to **cereal** flakes and may be mixed with **cereal** products as a breakfast dish. Fruit flakes are **rehydrated** in a few min and develop a pleasant fruit flavour and appearance.

CC J (Fruits, Vegetables and Nuts)
CT APPLES; BEANS; CAPSICUMS; CARROTS; CEREALS; DRIED FOODS; FLAKING; MEALS; SPICES; VEGETABLES; APPLE; BEAN; BREAKFAST; CARROT; **CEREAL**; DRIED; DRIED VEGETABLES; FLAKES; FRUIT; FRUIT (PROCESSING); GREEN; PEPPER; PEPPERS; VEGETABLES (PROCESSING)

L7 ANSWER 63 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
AN 1970(04):M0309 FSTA
TI Puffed **cereal**.
IN Vollink, W. L.; Ver Steeg, M. A.
PA General Foods Corp.
SO United States Patent, (1969)

PI US 3484250
 DT Patent
 LA English
 AB Liquefied fat is applied to the surface of puffed **cereal**, which is then toasted to yield a product having improved crispness upon **rehydration**.
 CC M (Cereals and Bakery Products)
 CT CEREALS; FATS; TEXTURE; TOASTING; FAT; IMPROVE # PUFFED; LIQUEFIED # IMPROVE # PUFFED

 L7 ANSWER 64 OF 64 FSTA COPYRIGHT 2004 IFIS on STN
 AN 1969(01):M0038 FSTA
 TI Dry **cereal** with fruit.
 IN Vollink, W.; Kenyon, R.; Barnett, S.; Bowden, H.
 PA General Foods Corp.
 SO United States Patent, (1968)
 PI US 3395022
 DT Patent
 LA English
 AB The patent covers the production of dry cereals containing freeze-dried fruit having a moisture content <3% and capable of **rehydration** in milk within 30-90 sec.
 CC M (Cereals and Bakery Products)
 CT CEREALS; **CEREAL**; DRY; FRUIT

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 FILE LAST UPDATED: 12 May 2004 (20040512/ED)

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=> s cereal and bowl(w)life
 23761 CEREAL
 3523 BOWL
 263118 LIFE
 6 BOWL(W)LIFE
 L8 5 CEREAL AND BOWL(W)LIFE

=> d l8 cbib,ab 1-5

L8 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

2002:942926 Methods of reducing friability of **cereal** products, potato chips, and freeze-dried foods, of increasing **bowl life** of **cereal** products, and of delaying rancidity of nuts. Krochta, John M.; Lee, Soo-yeun; Trezza, Thomas A. (USA). U.S. Pat. Appl. Publ. US 20020187230 A1 20021212 (English). CODEN: USXXCO. APPLICATION: US 2001-879794 20010611.

AB The invention provides methods of reducing the friability of food items such as **cereal** products (including ready to eat cereals and corn and tortilla chips), of potato chips, and of freeze-dried foods. The methods involve contacting the food item with water and then drying the food item to approximately its original water content. The water may be applied by any convenient means so long as it does not cause overhydration of the food item. The invention further provides methods of delaying the development of rancidity in nuts. The methods comprise contacting the nuts with water. In preferred forms, the methods comprise causing mild abrasion of the nuts to facilitate hydration.

L8 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

2002:711288 Document No. 137:200606 Phytoglycogen coating of food for improved crispness. Singh, R. Paul; Rovedo, Clara O.; Cura, Jose A. (University of California, USA). U.S. US 6451362 B1 20020917, 7 pp. (English). CODEN: USXXAM. APPLICATION: US 1999-240162 19990129.

AB Phytoglycogen coatings on ready-to-eat cereals provide extended **bowl life**. Thus, breakfast cereals coated with corn glycogen retained crispness at much higher levels than untreated controls over 3.5 min in milk. When added to food surfaces prior to frying, phytoglycogen decreased loss of crispness during post-frying storage, and also improved the appearance and flavor of the fried product.

L8 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

2002:549734 Document No. 138:302989 Use of partially defatted peanut flour in breakfast **cereal** flakes. Cheewapramong, P.; Riaz, M. N.; Rooney, L. W.; Lusas, E. W. (Dept. of Food Science & Technology, University of Nebraska-Lincoln, NE, 68583-0919, USA). Cereal Chemistry, 79(4), 586-592 (English) 2002. CODEN: CECHAF. ISSN: 0009-0352. Publisher: American Association of Cereal Chemists.

AB Extruded breakfast **cereal** flakes were made by replacing corn cones with nonroasted partially defatted peanut flour (PDPF) and roasted partially defatted peanut flour (R-PDPF) at various levels (10, 20, and 30%). The mixts. were extruded using a corotating twin-screw extruder to produce collets. The collets were flaked and then toasted. The extruded toasted flakes were analyzed for phys., physicochem., and sensory characteristics. Moisture content, bulk d., hardness (force to break), color, **bowl life**, water absorption, and water solubility indexes were significantly affected by the amount of PDPF and R-PDPF added in the formulation. A sensory panel found extruded toasted flakes made from corn cones and up to 20% R-PDPF were acceptable as control. Peanut flavor intensity was also evaluated. Surprisingly, peanut flavor intensity was the highest for flakes containing 30% PDPF, rather than those containing 30%R-PDPF.

L8 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

2000:347843 Breakfast **cereal** biscuit comprising waxy grain. Lewis, Deborah Ann; Lewis, David Adrian; Lewis, Victor Marcus (Byron Australia Pty. Ltd., Australia). PCT Int. Appl. WO 2000028836 A1 20000525
DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG.

(English). CODEN: PIXXD2. APPLICATION: WO 1999-AU1016 19991117.
PRIORITY: AU 1998-7162 19981117.

AB An improved breakfast **cereal** biscuit is provided comprising grain wherein the grain includes waxy grain in an amount of at least 20 % by weight of total grain content. The grain has been hydrated and cooked either sequentially or simultaneously or both, rolled into flakes, and either agglomerated and toasted into a desired biscuit shape or toasted and agglomerated into a desired biscuit shape. A process for the production of the improved breakfast **cereal** biscuit is also provided. The improved breakfast **cereal** biscuit typically exhibits extended **bowl life**, has improved nutritional qualities, is tender and crisp in texture, has better flavours, and requires reduced energy in the manufacturing process, when compared to standard flaked wheat breakfast **cereal** biscuits.

L8 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
1997:480190 Document No. 127:160914 Extruded breakfast cereals with improved **bowl life**. De Soete, J. (ORAFIT Belgium, Belg.).
Research Disclosure, 399(July), P475 (No. 39946) (English) 1997. RD 399046
19970710. CODEN: RSDSBB. ISSN: 0374-4353. PRIORITY: RD 1997-399046
19970710. Publisher: Kenneth Mason Publications Ltd..

AB Extruded rice crisps were prepared to contain 8-14% oligofructose or inulin. Those containing 14% oligofructose had best **bowl life**, the **cereal** remaining crisp after 15 min in milk.

=> s cereal and (hydrated or rehydrated)

23761 CEREAL

57057 HYDRATED

1594 REHYDRATED

L9 64 CEREAL AND (HYDRATED OR REHYDRATED)

=> d 19 cbib,ab 1-64

L9 ANSWER 1 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
2004:268209 Document No. 140:302635 Aqueous medium with increased viscosity, procedure for its production and its use.. Loetzbeyer, Thomas; Volland, Michael; Wittmann, Eva (Satia G.m.b.H., Germany; Degussa A.-G.). Ger.
Offen. DE 10244124 A1 20040401, 10 pp. (German). CODEN: GWXXBX.
APPLICATION: DE 2002-10244124 20020923.

AB An aqueous medium with increased viscosity, contains added oxidases and a modified gelable polymer component with phenolic substituents, the modification implemented by a) a protein with polyphenoloxidase activity and/or b) an enzyme mixture, containing hydrolases, oxidoreductases and peroxidases. The correspondingly modified medium can be dried and **rehydrated** without significant alterations of its original viscosity and/or gel strength and sensory characteristics. The fields of use intended for the presented aqueous media are foods/nutrients, cosmetics and pharmaceuticals.

L9 ANSWER 2 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
2003:688915 Document No. 139:196629 Enzyme-rich sprouted food products with limited pH drop and methods of making same. Fitzpatrick, Michael (The Harvest Festival Ltd., USA). U.S. US 6613366 B1 20030902, 68 pp.,
Cont.-in-part of U.S. Ser. No. 487,669, abandoned. (English). CODEN: USXXAM. APPLICATION: US 2002-96886 20020313. PRIORITY: US 1990-481579
19900216; US 1990-559100 19900730; US 1991-806580 19911212; US 1993-87109
19930702; US 1993-108176 19930817; US 1994-307384 19940914; US 1994-314453
19940928; US 1995-535360 19950928; US 2000-487669 20000119.

AB A class of food products whose nutrients have not been damaged by heat during the preparation process is described. These products are prepared with methods to limit souring, thus permitting these food products to be prepared at a temperature low enough to minimize damage to vital nutrients (especially enzymes)

without the objectionable excessive sourness and bitterness of similar products prepared without such methods. The result is a new class of delicious and nutrient rich health food products with many health benefits. Also disclosed is a Wet Grain Press for quickly and easily compressing very wet sprouts.

L9 ANSWER 3 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

2003:431549 Document No. 140:216962 Recovery of soil bacteria by adsorption onto biofilms and their propagation as biomass for bacterization of soils and crop residues. Claude, Pierre-Philippe (Valbios, Fr.). PCT Int. Appl. WO 2003046156 A2 20030605, 47 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (French). CODEN: PIXXD2. APPLICATION: WO 2002-FR4119 20021129. PRIORITY: FR 2001-15542 20011130.

AB A method of generating a biomass of edaphic soil microorganisms for use in soil treatment and processing of crop residues is described. Soil microorganisms are captured by adsorbing them from biofilms onto a **hydrated** carrier that is then recovered and cultured under conditions that allow the bound bacteria to propagate and spread into the medium. Use of an adsorbent allows the capture of small mols. that may play a role in the growth of the microorganisms. These bacteria are then stabilized and used to manufacture a biomass. The resulting bacterial biomasses and strains are useful for microbiol. bacterization of soils and crop residues, in particular **cereal** crop residues, including those of corn.

L9 ANSWER 4 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

2003:192922 Document No. 138:353055 Dynamic Viscoelastic and Tensile Properties of Gluten and Glutenin Gels of Common Wheats of Different Strength. Lee, Chia C.; Mulvaney, Steven J. (Department of Food Science, Cornell University, Ithaca, NY, 14853, USA). Journal of Agricultural and Food Chemistry, 51(8), 2317-2327 (English) 2003. CODEN: JAFCAU. ISSN: 0021-8561. Publisher: American Chemical Society.

AB Dynamic viscoelastic properties at 25°C of gluten and glutenin gels were obtained from Canadian common wheats of different strengths. The relaxation spectra showed a maximum intensity at a characteristic relaxation time (τ^*). The relaxation modulus associated with this maximum was taken as the strength of the glutenin or gluten gel transient network ($G(\tau^*)$). The ratio of $G(\tau^*)$ for glutenin and gluten gels from the same cultivar ranged from 5.6 for an extra strong cultivar to 51.1 for a soft wheat. This gives indirect evidence that the gliadin fraction weakens the glutenin gel network more in weaker cultivars. In addition, the fact that both glutenin and gluten gels showed extensive stress relaxation coupled with the fact that addition of L-cysteine to a gluten gel eliminated the network structure at 25°C and resulted in a power law stress relaxation spectrum suggests that the transient network in gluten is a reversible network. This power law relaxation pattern was not seen here for an entangled polymer melt (poly(dimethylsiloxane)). It was also found here that the viscosity of the gluten gel ($G(\tau^*) + \tau^*$) trended best with the tensile stress build-up in a uniaxial tensile test of gluten gels. Together, these results indicate that both network strength and relaxation times should be considered in characterizing the linear viscoelastic properties of **hydrated cereal** proteins.

L9 ANSWER 5 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

2002:597678 Document No. 137:351746 Effects of Na₂CO₃ and NaOH on DSC

thermal profiles of selected native **cereal** starches. Lai, L. N.; Karim, A. Abd; Norziah, M. H.; Seow, C. C. (School of Industrial Technology, Food Technology Division, Food Biomaterials Science Research Group, Universiti Sains Malaysia, Penang, 11800, Malay.). Food Chemistry, 78(3), 355-362 (English) 2002. CODEN: FOCHDJ. ISSN: 0308-8146. Publisher: Elsevier Science Ltd..

AB The effects of Na₂CO₃ and NaOH (at a concentration of 1 g alkalizing agent/100 g

dry starch) on the gelatinization properties of 1:4 and 2:3 starch/water mixts. were studied using differential scanning calorimetry (DSC). The starches studied included wheat, rice, waxy rice, corn and waxy corn. The addition of Na₂CO₃ or NaOH resulted in significant increases in transition temps. (onset, peak and conclusion), associated with starch gelatinization, suggesting a stabilization of the starch granules, probably through electrostatic interactions between Na⁺ ions and starch hydroxyl groups. The presence of Na₂CO₃ generally caused a significant reduction in gelatinization enthalpy (ΔH_G) of the higher moisture (1:4) systems, but had no effect in the less **hydrated** (2:3) systems. NaOH generally had no effect on ΔH_G of 1:4 systems, but gave rise to inconsistent effects in the 2:3 systems. Heating of alkali-containing samples above the gelatinization temperature range gave rise to an intriguing exothermic peak, the origin of which was attributed to repolymn. of the products of alkaline hydrolysis of starch. A sep. experiment, conducted to investigate the influence of increasing Na₂CO₃ concentration (up to 3 g/100 g starch) on thermal properties of 1:4 waxy rice starch/water systems, showed a gradual increase in gelatinization transition temps., a general decline in ΔH_G , and a marginal decrease in peak temperature of the repolymn. exotherm.

L9 ANSWER 6 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
2002:406850 Document No. 137:309842 In situ study of the changes in starch and gluten during heating of dough using attenuated-total-reflectance fourier-transform-infrared (ATR-FTIR). Sevenou, Olivier; Hill, Sandra E.; Farhat, Imad A.; Mitchell, John R. (Division of Food Sciences, University of Nottingham, Leicestershire, LE12 5RD, UK). Special Publication - Royal Society of Chemistry, 276(Plant Biopolymer Science), 275-283 (English) 2002. CODEN: SROCD. ISSN: 0260-6291. Publisher: Royal Society of Chemistry.

AB Starch gelatinization and the evolution of the water content dependent hydrogen bonding in the gluten fraction of starch/gluten mixts. were monitored using ATR-FTIR during heating. The IR spectra of starch-water suspensions showed a great dependency on temperature reflecting the mol. order dimension of the gelatinization process. The IR ratio 1547/1512/cm profiles as a function of temperature were similar for gluten, in starch/gluten mixts., and fully **hydrated** gluten alone that had undergone the same heat treatment. This indicated that the dehydration of gluten does not depend on the presence of wheat starch undergoing gelatinization. This finding is in contrast with the generally accepted belief that the gelatinization of starch during baking does deprive gluten of its water. Differential Scanning Calorimetry is not sensitive to structural changes in the gluten when it is heated in the dough state. This is due to the low level of energy involved and to the occurrence of starch gelatinization at the same range of temps. FTIR offer a mol. insight into the behavior of starch and gluten in **cereal**-based products.

L9 ANSWER 7 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
2002:63206 Document No. 136:339718 Formation of crystalline aggregates in slowly-cooled starch solutions prepared by steam jet cooking. Fanta, George F.; Felker, Frederick C.; Shogren, Randal L. (National Center for Agricultural Utilization Research, Plant Polymer Research, United States Department of Agriculture, Peoria, IL, 61604-3999, USA). Carbohydrate

Polymers, 48(2), 161-170 (English) 2002. CODEN: CAPOD8. ISSN: 0144-8617. Publisher: Elsevier Science Ireland Ltd..

- AB Spherocryst. particles were formed in dilute, jet cooked solns. of normal cornstarch, high amylose cornstarch, rice starch and wheat starch, when hot solns. were allowed to slowly cool in insulated Dewar flasks. Yields ranged from approx. 7 to 12%, and particles were composed largely of amylose. Spherocrystals were not obtained from waxy cornstarch, defatted cornstarch or potato starch. Normal cornstarch, high amylose cornstarch and rice starch yielded mixts. of two different particulate species, each having its own unique size and morphol. Both species were strongly birefringent, and no significant loss of birefringence was observed when particles produced from normal cornstarch were heated in water to 97-99°. SEM showed that smaller-sized particles were disk or torus-shaped and often exhibited spiral surface striations. The larger particles were approx. spherical in shape, and had rough surface textures. Wheat starch yielded only a single spherical small-particle species. X-ray powder diffraction patterns of small particle material matched patterns previously reported for the 61 amylose V-helical complex in the **hydrated** form. In contrast, diffraction patterns for large particle material suggested the 71 V-helical conformation for amylose. These results are consistent with the theory that spherocryst. particles result from crystallization of helical inclusion complexes formed from amylose and the native lipid material present in **cereal** starch granules.

L9 ANSWER 8 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
2001:557806 Document No. 135:108732 Films for ink-jet printers. Faria, Acioli Silva (Brazil). Braz. Pedido PI BR 9900658 A 20000829, 5 pp. (Portuguese). CODEN: BPXXDX. APPLICATION: BR 1999-658 19990223.

- AB Poly(vinyl acetate) based films are prepared from water-base varnish, alc.-based varnish for concrete, tile, and ceramic, **hydrated** alc., **cereal** alc., and optionally pigments.

L9 ANSWER 9 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
2001:25674 Document No. 134:70658 Production of isoflavone enriched fractions from soy protein extracts. Gugger, Eric; Grabiell, Richard (Archer Daniels Midland Company, USA). U.S. US 6171638 B1 20010109, 15 pp., Cont.-in-part of U. S. 6,033,714. (English). CODEN: USXXAM. APPLICATION: US 2000-478751 20000106. PRIORITY: US 1996-614545 19960313; US 1997-868629 19970604; US 1998-35588 19980305.

- AB The temperature sensitive differential of the solubilities of various isoflavone fractions is used to initially sep. the fractions by heating an aqueous soy molasses or soy whey feed stream. The temperature of the feed stream is selected according to the temperature at which a desired isoflavone fraction or fractions become soluble. Then, the heated feed stream is passed through an ultrafiltration membrane or reverse osmosis in order to concentrate the solids. The resulting permeate is put through a resin adsorption process carried out in at least one liquid chromatog. column to further sep. the desired isoflavone fractions. Various processes are described for drying and crystallizing the isoflavone fractions to a powder. A solvent is then added to the isoflavone fraction to dissolve impurities and rehydrate the dry powder. Usually, the **rehydrated** isoflavone is used as an additive to a food ingredient or food product. At various points in the process a selected amount of isoflavones may or may not be blended with the powder in order to bring the isoflavone to a desired characteristic specification or to produce a food ingredient or food product.

L9 ANSWER 10 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
2000:553359 Document No. 133:149763 Method of preparing microparticles of phytosterols or phytostanols. Zawistowski, Jerzy (Forbes Medi-Tech Inc., Can.). PCT Int. Appl. WO 2000045648 A1 20000810, 29 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ,

DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-CA96 20000203. PRIORITY: US 1999-243877 19990203.

AB A method of preparing microparticles of one or more phytosterols, phytostanols or mixts. of both comprises: dispersing or suspending the phytosterols or phytostanols or mixts. of both in a semi-fluid, fluid or viscous vehicle; and exposing the vehicle so formed to impact forces. The microparticles are used for foods, beverages, pharmaceuticals, and nutraceuticals. A composition containing campesterol, campestanol, β -sitosterol, and sitostanol was mixed with nonfat milk powder. The mixture was **hydrated** and homogenized using a high-speed microfluidizer. An yoghurt culture containing Lactobacillus bulgaricus and Streptococcus thermophilus was introduced into the above milk mixture. After gentle mixing, the inoculated milk was distributed into containers and the containers were thermally sealed and incubated (at 44°). When pH reached about 4.5, the yoghurt was withdrawn from the incubator, chilled quickly and stored at 4°.

L9 ANSWER 11 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
2000:520426 Document No. 133:220223 Oxalate oxidases and differentiating surface structure in wheat: germins. Lane, Byron G. (Department of Biochemistry, University of Toronto, Toronto, ON, M5S 1A8, Can.). Biochemical Journal, 349(1), 309-321 (English) 2000. CODEN: BIJOAK. ISSN: 0264-6021. Publisher: Portland Press Ltd..

AB Oxalate oxidases (OXOs) is concentrated in the surface tissues of wheat embryos and grains: germin is concentrated in root and leaf sheaths that surround germinated embryos; pseudogermin (OXO- ψ) is concentrated in the epidermis and bracts that "encircle" mature grains. The epidermal accumulation of OXO- ψ was found to presage the transition of a delicate "skin", similar to the fragile epidermis of human skin, into the tough shell (the miller's "beeswing") that is typical of mature wheat grains. A narrow range of oxalate concentration (1-2 mM) in the **hydrated** tissues of major crop cereals (barley, maize, oat, rice, rye and wheat) contrasted with wide variations in their OXO expression, e.g. cold-tolerant and cold-sensitive varieties of maize have similar oxalate contents but the former was found to contain approx. 20-fold more germin than did the latter. Well-known OXOs in sorghum, a minor **cereal**, and beet, a dicotyledon, were found to have little antigenic relatedness to the germins, but the beet enzyme did share some of the unique stability properties that are peculiar to the germin-like OXOs that are found only in the major crop cereals. Their concentration in surface structures of domesticated wheat suggests a biochem. role for germin-like OXOs: programmed cell death in surface tissues might be a constitutive as well as an adaptive form of differentiation that helps to produce refractory barriers against tissue invasion by predators. Incidental to the principal investigation, and using an OXO assay (oxalate-dependent release of CO₂) that did not rely on detecting H₂O₂, which is often fully degraded in cell exts., it was found that OXO activity in soluble exts. of wheat was manifested only in standard solution assays if the extract was pretreated in a variety of ways, which included preincubation with pepsin or highly substituted glucuronogalactoarabinoxylans (cell-wall poly-saccharides).

L9 ANSWER 12 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
2000:347843 Breakfast **cereal** biscuit comprising waxy grain. Lewis, Deborah Ann; Lewis, David Adrian; Lewis, Victor Marcus (Byron Australia Pty. Ltd., Australia). PCT Int. Appl. WO 2000028836 A1 20000525
DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,

MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-AU1016 19991117. PRIORITY: AU 1998-7162 19981117.

AB An improved breakfast **cereal** biscuit is provided comprising grain wherein the grain includes waxy grain in an amount of at least 20 % by weight of total grain content. The grain has been **hydrated** and cooked either sequentially or simultaneously or both, rolled into flakes, and either agglomerated and toasted into a desired biscuit shape or toasted and agglomerated into a desired biscuit shape. A process for the production of the improved breakfast **cereal** biscuit is also provided. The improved breakfast **cereal** biscuit typically exhibits extended bowl life, has improved nutritional qualities, is tender and crisp in texture, has better flavours, and requires reduced energy in the manufacturing process, when compared to standard flaked wheat breakfast **cereal** biscuits.

L9 ANSWER 13 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
2000:894 Document No. 132:278296 Scanning probe microscopy studies of **cereal** seed storage protein structures. Tatham, Arthur S.; Thomson, Neil H.; McMaster, Terence J.; Humphris, Andrew D. L.; Miles, Mervyn J.; Shewry, Peter R. (IACR-Long Ashton Research Station, Department of Agricultural Sciences, University of Bristol, Bristol, BS41 9AF, UK). Scanning, 21(5), 293-298 (English) 1999. CODEN: SCNNDP. ISSN: 0161-0457. Publisher: FAMS, Inc..

AB Scanning probe microscopes (SPMs) share a number of common features which give the techniques advantages over conventional light and electron microscopy. First, high resolution, up to the atomic level, is possible in certain cases, and second, they are nondestructive, requiring no staining, or coating and the images can be obtained in the **hydrated** state or under water. Scanning probe microscopes, particularly scanning tunneling microscopes (STM) and atomic force microscopes (AFM), have been used to study food-related systems, ranging from relatively large structures such as starch granules to the organization of secondary structures in proteins and the interaction of proteins. The seed storage proteins (gluten) of wheat are responsible for the viscous and elastic properties of wheat doughs that allow them to be used for a wide range of different food products. Using AFM and STM, images of individual and groups of proteins have been obtained in both the dry and **hydrated** states. The ability to work in liquid environments allows the conformation of proteins to be determined under conditions approaching "native.". The AFM and STM have been used to image both gliadins and glutenins and to study their aggregative behavior in relation to gluten and dough systems.

L9 ANSWER 14 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1999:784043 Document No. 132:15013 Manufacture of cellular concrete using protein foaming agent. Vinarov, Alexandr Juryevich; Sokolov, Dmitry Pavlovich; Sokolova, Elena Andreevna; Vinarov, Dmitry Alexandrovich; Panteleev, Viktor Ivanovich (Russia). PCT Int. Appl. WO 9962842 A1 19991209, 10 pp. DESIGNATED STATES: W: BR, CA, MX, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1998-RU249 19980731. PRIORITY: RU 1998-109910 19980529.

AB Cellular concrete is manufactured using a foaming agent in the form of a paste, which is obtained by reacting cereals, **hydrated** lime, and water in 2:1:3 ratio at 20-35° for ≥24 h.

L9 ANSWER 15 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1999:783879 Document No. 132:2956 Flavor-delivery systems comprising a microemulsion or **hydrated** reversed micelles. Taylor, Andrew John; Alston, Mark John; Hemingway, Katrina Marie; Chappell, Colin Graham;

Mlotkiewicz, Jerzy Aleksander (Kerry Ingredients (UK) Limited, UK; University of Nottingham). PCT Int. Appl. WO 9962357 A1 19991209, 26 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-GB1659 19990526. PRIORITY: GB 1998-11691 19980601.

AB Flavor-releasing compns. comprise water in oil microemulsion droplets and/or **hydrated** reverse micelles. The cores may contain a flavor precursor and an enzyme; an active flavor is produced by the action of the enzyme. Thus, a flavor-enhancing system consists of vegetable oil 80.5, lecithin 15.0, furaneol glycoside 1.0, glycosidase 0.5, and water 3.0%.

L9 ANSWER 16 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1999:401521 Document No. 131:31318 Feed containing molasses bentonite and zeolite. Kemp, Philip W.; Nougher, Thomas Hall (Australia). U.S. US 5908634 A 19990601, 6 pp., Cont.-in-part of U.S. Ser. No. 368,723, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1996-858175 19961114. PRIORITY: WO 1992-AU104 19920310; US 1993-969846 19930719; US 1995-368723 19950104.

AB An alkaline animal feed, in granular or solid form, with a pH ≥ 7.5 , comprising dunder, dunder and molasses, or dunder and molasses byproducts is mixed with sorptive materials, including bentonite and zeolite. **Hydrated** lime may be added as a source of calcium, to improve pellet quality, for moisture absorbency and for pH control. **Cereal** grains, trace elements, bypass proteins and other additives may be included in the mix to tailor the animal feed to the user's requirements.

L9 ANSWER 17 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1999:119748 Document No. 130:181803 Process for producing reduced-flatulence legume-based snack foods. Kazemzadeh, Massoud (USA). U.S. US 5871801 A 19990216, 11 pp. (English). CODEN: USXXAM. APPLICATION: US 1997-822292 19970321.

AB Legumes are mixed with an aqueous solvent and processing aids and allowed to hydrate so that oligosaccharides and(or) polysaccharides are extracted. The legumes are mixed with a **cereal** flour to form a dough, which is then cooked and shaped as snack food. Thus, ground kidney beans are mixed with processing aids such as CaO, CaCO₃, and(or) CaOH and **hydrated** at 175-180°F for about 20 min and a press cake is produced that is suitable for the production of snack chips.

L9 ANSWER 18 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1998:661162 Document No. 130:63180 Quantitative X-ray microanalysis of solutes in individual plant cells: A comparison of microdroplet and in situ frozen-**hydrated** data. Hinde, P.; Richardson, P.; Koyro, H.-W.; Tomos, A. D. (School of Biological Sciences, University of Wales, Gwynedd, LL57 2UW, UK). Journal of Microscopy (Oxford), 191(3), 303-310 (English) 1998. CODEN: JMICAR. ISSN: 0022-2720. Publisher: Blackwell Science Ltd..

AB Two different approaches to X-ray microanal. were tested and compared. These were the anal. of sap droplets extracted from individual cells (plants grown and analyzed in Bangor, U.K.), and the anal. of cells in situ in frozen tissue (plants grown and analyzed in Hannover, Germany). The data suggest that both these methods can produce quant. data accurately reflecting in vivo concns. in **cereal** leaf epidermal cells. The relative merits of the two procedures are discussed with reference to possible sources of error and their application to other cell types. Bulk wheat

leaf tissue concns. of K and Cl did not differ significantly between the two locations, but Ca concentration was significantly higher in the plants grown

in Hannover. Microdroplet anal. invariably yielded linear responses in the range of concns. found in plant tissue (r^2 for Ca > 0.97, r^2 for K, Cl > 0.99), and interference of other components of the sap was minimal. The calibration curves for the frozen-hydrated material were typically linear in the same range of concns. (r^2 for K, Ca, Cl > 0.95), and the results for K and Cl concentration in these samples were highly consistent with those measured in the microdroplet expts. In wheat, for example, the cellular Cl concentration varied between 12 mM and 119 mM, but no significant differences were found between the two techniques of measurement. The results for cellular Ca differed in a manner which might be predicted from the results of the bulk tissue analyses.

L9 ANSWER 19 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1998:559612 Document No. 129:287888 Phenylalanine ammonia-lyase inhibition, autofluorescence, and localized accumulation of silicon, calcium and manganese in oat epidermis attacked by the powdery mildew fungus *Blumeria graminis* (DC) Speer. Carver, T. L. W.; Thomas, B. J.; Robbins, M. P.; Zeyen, R. J. (Institute of Grasslands and Environmental Research, Aberystwyth, Dyfed, SY23 3EB, UK). *Physiological and Molecular Plant Pathology*, 52(4), 223-243 (English) 1998. CODEN: PMPPEZ. ISSN: 0885-5765. Publisher: Academic Press.

AB Phenolic-based autofluorogens accumulate locally in haloes and papillae formed in **cereal** epidermal cells responding to attack by germ tubes of *Blumeria graminis* (the powdery mildew fungus). The chemical elements silicon, calcium and manganese have been reported to accumulate in spatial coincidence with autofluorogens. The authors tested the hypothesis that chemical element accumulations are dependent upon the presence of autofluorogens. Light and fluorescence microscopy showed that treating seedling leaves of *Selma* oat (*Avena sativa* L.) with α -amino- β -phenylpropionic acid (AOPP) to inhibit phenylalanine ammonia lyase (PAL) greatly suppressed the frequency and intensity of localized autofluorescence. Energy dispersive X-ray microanal. was used to identify and quantify levels of Si, Ca and Mn at 12, 16, 18, 24 and 30 h after inoculation. Leaf specimens were cryopreserved in the frozen-hydrated state allowing elemental anal. of halo and upper papilla regions, and then freeze-dried for anal. from deeper within cells. Although autofluorescence was detected at 12 h, no accumulation of any element was detected until 18 h. Results strongly indicated that Si accumulation is a process independent from autofluorogen accumulation. At attack sites, Mn levels were generally elevated in association with AOPP treatment, while Ca levels deep within epidermal cells decreased. Further comparisons were made between successful and failed *B. graminis* penetration sites and detailed results are presented and discussed. (c) 1998 Academic Press.

L9 ANSWER 20 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1998:274821 Document No. 129:27541 Fertilizers containing silica gel or sol and their application to gramineous plants. Noda, Takanobu; Honda, Hirobumi (Fuji-Davison Chemical Co., Ltd., Japan). *Jpn. Kokai Tokkyo Koho JP 10114588 A2* 19980506 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-267164 19961008.

AB Fertilizers which strengthen stems and enhance crop yield of gramineous plants contain silica gel or sol as an active ingredient. The fertilizers are (1) spread on soil, (2) floated on water as fine powders, (3) set on seedling beds, or (4) set in paddy water. The fertilizers show rapid release of silicic acid.

L9 ANSWER 21 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1997:746161 Document No. 128:44660 *Selaginella* gene sl-tps/p and trehalose-6-phosphate synthetase/phosphatase and method for increasing

trehalose content in organisms. Iturriaga De La Fuente, Gabriel; Zentella, Gomez Rodolfo (Universidad Nacional Autonoma De Mexico, Mex.; Iturriaga De La Fuente, Gabriel; Zentella Gomez, Rodolfo). PCT Int. Appl. WO 9742327 A2 19971113, 52 pp. DESIGNATED STATES: W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (Spanish). CODEN: PIXXD2. APPLICATION: WO 1997-MX12 19970506. PRIORITY: MX 1996-961719 19960508.

AB The invention discloses the cloning and determination of the nucleotide sequence

of a complete mol. of cDNA which codes for the bifunctional enzyme trehalose-6-phosphate synthetase/phosphatase of *Selaginella lepidophylla*. The enzyme synthesizes trehalose. The cDNA can be subcloned into vectors for the expression of enzyme in host cells. The transformed cells produce trehalose thereby increasing the tolerance to stress induced by heat, cold, salinity and dryness. This invention can be used to improve the thermotolerance and osmotolerance of plants cultivated in dry and semidry areas and will also contribute to reduce the use of water for watering purposes. Also, the trehalose produced in transgenic plants could extend the shelf-life of agricultural products, preserving them during long periods of time in dehydrated condition without losing the odor, taste and texture characteristics, once they are **rehydrated**. Finally, the over-production of trehalose in bacteria, yeasts, fungi, animal cells or transgenic plants will constitute an economical source of said product to be used as additive to preserve various biol. products or processed food products.

L9 ANSWER 22 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1997:741698 Document No. 128:47531 NMR and FTIR studies of **hydrated** pea proteins. Belton, P. S.; Bogracheva, T.; Czerhalmi, Z.; Czukor, B.; Grant, A.; Lambert, N.; Wellner, N. (Norwich Lab., Institute Food Research, Colney, Norwich, NR4 7UA, UK). Food Hydrocolloids, 11(4), 485-491 (English) 1997. CODEN: FOHYES. ISSN: 0268-005X. Publisher: Oxford University Press.

AB The effects of increasing D2O hydration on the plasticization of vicilin, legumin and albumin fractions from peas were investigated using solid state 1H-NMR transverse relaxation techniques. Measurements showed increases on hydration in the T2 and intensity of the exponential component of the relaxation decay. However, a Gaussian (more rigid) component remained throughout the sample composition range. This behavior contrasted with that observed in barley storage proteins and would indicate considerably less plasticization in legume proteins. In 2H-NMR transverse relaxation measurements of a highly D2O **hydrated** sample over a large temperature range., vicilin was shown to be hydrophilic in nature. However, the observed absorption of water by vicilin was less than in the HMW subunits of wheat. FTIR spectra show little structural change in vicilin and legumin on hydration, in contrast to changes occurring in the **cereal** proteins. These differences in behavior may be ascribed to differences between the globular structure of the legume proteins and the more linear structure of the **cereal** proteins.

L9 ANSWER 23 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1997:172308 Document No. 126:172985 Impregnation of solid organic fibers by vacuum evaporation and repressurization. (Cogat, Pierre Olivier, Fr.). Fr. Demande FR 2733438 A1 19961031, 9 pp. (French). CODEN: FRXXBL. APPLICATION: FR 1995-5014 19950427.

AB **Hydrated** organic fibers are heated, putting the preheated fibers under vacuum instantaneously causing evaporation of the water and creating a network of microchannels in the fiber, and introducing an injection solution at the same temperature as the fibers before or after applying the vacuum, and rapidly pressurizing to force the solution into the microchannels. The

process is useful in impregnation of wood with fungicides, impregnation of **cereal** grains with enzyme solns. for liquefaction of starch, etc.

L9 ANSWER 24 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1997:142004 Document No. 126:260519 A ¹³C-NMR study on the conformational and dynamical properties of a **cereal** seed storage protein, C-hordein, and its model peptides. Gil, Ana M.; Masui, Keiko; Naito, Akira; Tatham, A. S.; Belton, P. S.; Saito, Hazime (Dep. of Chemistry, University of Aveiro, Aveiro, 3800, Port.). Biopolymers, 41(3), 289-300 (English) 1997. CODEN: BIPMAA. ISSN: 0006-3525. Publisher: Wiley.

AB We have recorded the ¹³C CP-MAS and DD-MAS NMR spectra of dry and **hydrated** barley storage protein, C-hordein, as a model for wheat S-poor prolamins, together with those of model synthetic peptides (Pro)2(Gln)6 (I) and (Pro-Gln-Gln-Pro-Phe-Pro-Gln-Gln)3 (II) under dry or **hydrated** conditions. The spectral features of C-hordein as well as these peptides were appreciably different from each other depending on the extent of hydration, reflecting different domains that adopt different types of conformations as well as dynamics. In particular, considerable proportions of the peak intensities were lost in the CP-MAS spectra, and well-resolved ¹³C-NMR signals emerged in DD-MAS NMR spectra owing to acquisition of mol. motions by swelling. It was shown that local β -turn or (Pro)_n type II conformation is more preferable for individual Pro residues and β -sheet type conformation is dominant for individual Gln residues in the dry and **hydrated** systems. In addition, two types of Gln environments are originated in C-hordein that differ in their mobility. Further, ¹³C spin-lattice relaxation times (T₁s) of C-hordein and peptide II were reduced by more than one order of magnitude by hydration, reflecting the presence of well-swollen mol. chains. In contrast, the T₁ values of peptide I upon hydration remained one third of those in the dry state. Carbon-resolved protein spin-lattice relaxation times in the rotating frame (T₁ρs) were also decreased by about 50% upon hydration, although these parameters were less sensitive as compared to T₁ values. In addition, the ¹³C-NMR signals of the aromatic side chain of Phe residues disappeared on hydration owing to interference between the frequency of the acquired flip-flop motion and the proton decoupling frequency. This information gives a new insight into establishing the structural properties of the studied protein system. A model may be put forward for a gel-type structure in which the more rigid part of the system involves intermol. hydrogen-bonded Gln side chains as well as some hydrophobic pockets involving Pro and Phe residues. The liquid-like domain is characterized by considerable backbone and side-chain motion as well as rapid ring-puckering motion in Pro residues.

L9 ANSWER 25 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1997:131544 Document No. 126:141980 Characterization of genes expressed when dormant seeds of cereals and wild grasses are **hydrated** and remain growth-arrested. Walker-Simmons, M. K.; Goldmark, Peter J. (USDA-ARS, Washington State University, Pullman, WA, 99164-6420, USA). Plant Dormancy: Physiology, Biochemistry and Molecular Biology, [International Symposium on Plant Dormancy], 1st, Corvallis, Oreg., Aug., 1994, Meeting Date 1994, 283-291. Editor(s): Lang, Gregory A. CAB International: Wallingford, UK. (English) 1996. CODEN: 63ZVAD.

AB A review with 22 refs. describing recent progress in identifying and characterizing genes expressed when dormant seeds of cereals and wild grasses are **hydrated** and remain growth arrested.

L9 ANSWER 26 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1997:21759 Document No. 126:73906 Thermomechanical properties of glassy **cereal** foods. Le Meste, M.; Roudaut, G.; Davidou, S. (Lab. Biochim., Physico-Chim. Proprietes Sensorielles Aliments Ecole Natl. Super., Dijon, 21000, Fr.). Journal of Thermal Analysis, 47(5), 1361-1375 (English) 1996. CODEN: JTREA9. ISSN: 0368-4466. Publisher: Akademiai Kiado.

AB The main objective of this paper is to discuss the relationship between phys. state, fracture mechanism, and texture for low moisture **cereal**-based foods. Expts. were also carried out to get a better understanding of the role of water. At room temperature, extruded bread and white bread (previously) dehydrated, then **rehydrated** in atms. with controlled humidities exhibited a brittle behavior up to around 9% moisture. At 13.7% moisture, they were ductile. A significant loss in the crispness of extruded bread was observed between 8.5 and 10% moisture. The glass transition temperature (Tg) was measured, using dynamic mech. thermal anal. (DMTA), for samples with up to 40% moisture. The resulting Tg curve showed that the important changes in fracture mechanisms and crispness occurred while the samples were still in the glassy state. The viscoelastic behavior of both extruded and white breads suggested that a secondary relaxation occurred around 10°. Another event was observed around 70° for low moisture sample, using DMTA. This event was attributed to disruption of low energy interactions.

L9 ANSWER 27 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1995:728339 Document No. 123:226522 The status of trace elements in staple foods. Part 2. Some effects of **cereal** and potato processing. Brueggemann, Joerg; Kumpulainen, Jorma (Federal Center Cereal Potato Lipid Research, Detmold, D-32703, Germany). Zeitschrift fuer Lebensmittel-Untersuchung und -Forschung, 201(1), 7-11 (English/German) 1995. CODEN: ZLUFAR. ISSN: 0044-3026. Publisher: Springer.

AB The effects of food processing on some **cereal** and potato products are discussed with respect to the status of 11 trace elements. The influences of milling, bread making and cooking of potatoes on the contents of trace elements are demonstrated. It is shown that these recently obtained results are quite representative for the former federal Republic of Germany (FRG) as compared with results published previously. Average intake levels of undesired elements such as cadmium and lead, as well as of essential elements such as calcium, copper, iron, magnesium, manganese, molybdenum, nickel, selenium and zinc via consumption of **cereal** and potato products are given.

L9 ANSWER 28 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1994:268783 Document No. 120:268783 Stability and problems in recovery of fumonisins added to corn-based foods. Scott, Peter M.; Lawrence, Guillaume A. (Health Protection Br., Health Canada, Ottawa, ON, K1A 0L2, Can.). Journal of AOAC International, 77(2), 541-5 (English) 1994. CODEN: JAINEE. ISSN: 1060-3271.

AB Because the natural occurrence of fumonisins is so far known almost exclusively in corn, the authors have limited their investigations on their stability to corn-based foods. In these studies, distinction must be made between real losses, binding, and any matrix-related method problems. Fumonisin B1 (FB1) and B2 (FB2) were about 40% recovered when heated in corn meal at 190°, about 20-30% recovered when heated in moist corn meal at 190°, and completely unstable in corn meal at 200°. Average recoveries of FB1 and FB2 added to blank heated matrixes were 69-107% in control expts. Baking corn meal muffins spiked with 2.5 µg FB1 and FB2/g corn meal at 220° also resulted in losses of fumonisins. Little or no fumonisins were recovered from corn bran flour when methanol-water (3 + 1) was used as extraction solvent. However, when methanol-borate buffer (pH 9.2) (3 + 1) was used, recoveries averaged 91 ± 17 and 84 ± 9%, resp., for FB1 and FB2; and natural contamination of the corn bran flour with FB1 and FB2 at levels of 1.9 and 0.95 µg/g, resp., was revealed. Comparable recoveries were observed for 1 brand of a corn bran breakfast **cereal**, but the binding effect was not seen with a second brand, for which methanol-water (3 + 1) alone was a good extraction solvent. Recoveries of FB1 and FB2 from a mixed **cereal** for babies were only about 50% with either extraction solvent mixture

Additives

present in the mixed **cereal**-calcium carbonate, dibasic calcium

phosphate, and reduced iron (iron filings)-did not affect recoveries of FB1 and FB2 when added to ground corn or corn flakes, although **hydrated** ferrous sulfate did.

L9 ANSWER 29 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1994:53325 Document No. 120:53325 Proton nuclear magnetic resonance lineshapes and transverse relaxation in a **hydrated** barley protein. Belton, P. S.; Gil, A. M. (Inst. Food Res., AFRC, Colney/Norwich, NR4 7UA, UK). Journal of the Chemical Society, Faraday Transactions, 89(23), 4203-6 (English) 1993. CODEN: JCFTEV. ISSN: 0956-5000.

AB In many **hydrated** biopolymer systems proton NMR lineshapes consist of a broad component and a narrow component. It is often assumed that the narrow component arises from water and that its lineshape arises from nuclei in the motionally narrowed regime. For the model **cereal** protein system, C-hordein-water, the effects of magnetic field strength, magic-angle spinning and 90-90 and 90-180 pulse sequences are examined. It is shown that the narrow components contain contributions from both static dipolar interactions and field-dependent terms. It is therefore concluded that simplistic interpretations of the origins of the relaxation mechanisms in terms of motionally narrowed models are not suitable.

L9 ANSWER 30 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1993:494427 Document No. 119:94427 Effect of dry or **hydrated** bentonite on the wool growth and liveweight gain of sheep fed wheat chaff. Murray, P. J.; Winslow, S. G.; Rowe, J. B. (Div. Anim. Prod., West. Austr. Dep. Agric., South Perth, 6151, Australia). Australian Journal of Experimental Agriculture, 32(5), 595-600 (English) 1992. CODEN: AJEAEL. ISSN: 0816-1089.

AB Many reports on the use of bentonite to increase wool growth indicate variable responses and it is often claimed that this variability is related to the chemical characteristics or the form in which the bentonite is fed. This paper describes 3 expts. in which there was consistency in the type and form of the clay. There was also comparison of the effects of dry and **hydrated** bentonite. In the first experiment, 64 sheep were individually penned and fed wheat chaff ad libitum. Thirty sheep were fed chaff only, 17 sheep received dry bentonite added to their chaff (20 g/kg chaff) and another 17 sheep had 23.7 g/day of bentonite added to their drinking water. Inclusion of bentonite in the drinking water significantly increased wool growth and increased chaff intake. In the 2nd experiment, 105 sheep were penned in groups of 7 and each pen fed wheat chaff ad libitum. Five pens of sheep had dry bentonite added to their chaff (20 g/kg chaff) while another 5 pens had bentonite added to their drinking water (23.7 g/sheep.day). There were 5 pens of sheep which received no bentonite. Inclusion of bentonite either in the drinking water or in the chaff significantly increased chaff intake, but had no effect on wool growth. In the 2rd experiment, 60 sheep were divided into 12 groups and each group grazed individual 0.7 ha of **cereal** stubble. All groups were supplemented with the equivalent of 200 g of lupin grain/sheep-day fed twice weekly and 6 of the groups were watered by buckets containing **hydrated** bentonite (11.8 g bentonite/L). In expts. 2 and 3, inclusion of bentonite in the diet or in the drinking water had no effect on wool growth, but liveweight gain was significantly increased. It was concluded that the variability in the response to bentonite was not related to its chemical composition or the form in which it is administered and that, on balance, bentonite does not offer a practical or reliable means of increasing wool growth in sheep.

L9 ANSWER 31 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1993:424791 Document No. 119:24791 Protective modification of freeze stress in plant tissue. Olien, Robert (Crop Soil Sci. Dep., Michigan State

- Univ., East Lansing, MI, 48824-1325, USA). *Thermochimica Acta*, 212, 255-60 (English) 1992. CODEN: THACAS. ISSN: 0040-6031.
- AB Arabinoxylan mucilages from cell walls of hardy winter **cereal** plants inhibit the initial growth of ice crystals. These polymers affect the kinetics of freezing by adhesion to ice through interfacial liquid. The energy of polymer hydration decreases the latent heat of freezing by reducing the activation energy of melting. The decrease is a measure of adhesion energy. Other **hydrated** substances including the plasmalemma also equilibrate with freezing by adhesive interactions. Adhesion can produce lethal stress by -10° . The adhesive stress can be reduced to osmotic stress by release of solutes from the protoplasts into the intercellular space. The interfacial tension in winter **cereal** plants is reduced by hydrolysis of fructan to sugars.
- L9 ANSWER 32 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1993:6041 Document No. 118:6041 Composition for achieving animal weight gain with mycotoxin-contaminated animal food. Beggs, Lawrie (American Colloid Co., USA). Can. Pat. Appl. CA 2052551 AA 19920522, 26 pp. (English). CODEN: CPXXEB. APPLICATION: CA 1991-2052551 19911001. PRIORITY: US 1990-616611 19901121.
- AB A method for increasing the nutritional value of mycotoxin-contaminated feed by supplementing the feed with montmorillonite clay is described. A 42-day feed study on swine using feed containing corn contaminated with aflatoxin B1 was conducted. At the end of study, the group fed with the intermediate level of aflatoxin B1, 420 ppb, and 0.5% of **hydrated** Na Ca attapulgite clay showed body weight gain comparable to the control group not fed aflatoxin B1.
- L9 ANSWER 33 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1992:611334 Document No. 117:211334 Use of **hydrated** polysaccharide hydrocolloid, insoluble fiber, and protein as fat substitute for baked goods. Murphy, Gregory B.; Entenmann, William J.; Lang, Kevin W.; Frake, Barry N. (Kraft General Foods, Inc., USA). U.S. US 5133984 A 19920728, 8 pp. Cont.-in-part of U.S. Ser. No. 366,902, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1990-540433 19900615. PRIORITY: US 1989-366902 19890615.
- AB Fat substitutes that are a mixture of a **hydrated** polysaccharide hydrocolloid, a **hydrated** insol. fiber, and **hydrated** protein in an aqueous suspension are used in doughs and batters to prepare fat-free baked goods. The components of the fat substitute are used in the weight ratio 1:(0.8-6):(1.1-4.5) (polysaccharide:fiber:protein). The polysaccharide is a mixture of an anionic gum and a galactomannan. Optimization of the fat substitute mixture for cakes gave an aqueous suspension of xanthan gum 1.0, guar gum 1.0, dextrose 2.3, oat fiber 3.6, and non-fat milk solids (36% protein) 12.4% as that giving the best appearance and organoleptic properties. The use of the fat substitutes in cakes, hamburger buns, Danish pastries, cookies, and high-fiber bread is demonstrated.
- L9 ANSWER 34 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1992:588187 Document No. 117:188187 Characteristics of a **hydrated**, alginate-based delivery system for cultivation of the button mushroom. Romaine, C. P.; Schlaghauser, B. (Dep. Plant Pathol., Pennsylvania State Univ., University Park, PA, 16802, USA). *Applied and Environmental Microbiology*, 58(9), 3060-6 (English) 1992. CODEN: AEMIDF. ISSN: 0099-2240.
- AB The production of the button mushroom *Agaricus bisporus* with mycelium-colonized alginate pellets as an inoculant of the growing medium was investigated. Pellets having an irregular surface and porous internal structure were prepared by complexing a mixture of 1% sodium alginate, 2-6% vermiculite, 2% hygramer, and various concns. of Nutrisoy (soy protein) with calcium chloride. The porous structure allowed the pellets to be

formed septically and then inoculated and colonized with the fungus following sterilization. By using an ELISA to estimate fungal biomass, the matrix components of the pellet were found to be of no nutritive value to *A. bisporus*. Pellets amended with Nutrisoy at a concentration of 0.5-8% supported extensive mycelial growth, as determined by significantly increased ELISA values, with a concentration of 4% being optimal and higher concns. proving

inhibitory. The addition of **hydrated**, mycelium-invaded pellets to the compost or casing layer supported the thorough colonization of the growing substrate and culminated in the formation of mushrooms that showed normal development and typical morphol. Yields and sizes of mushrooms were comparable from composts seeded with either colonized pellets or **cereal** grain spawn. Similarly, amending the casing layer with pelletized-mycelium-colonized compost result in a 2-3-day-earlier and more-synchronous emergence of mushrooms than with untreated casing. This technol. shows the greatest potential as a pathogen-free inoculant of the casing layer in the com. cultivation of mushrooms.

L9 ANSWER 35 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1991:557268 Document No. 115:157268 Gas chromatographic determination of metolachlor in agricultural products. Maruyama, Kouji; Suzuki, Takasi; Saito, Yukio (Cent. Res. Lab., Japan Grain Insp. Assoc., Ichikawa, 272-01, Japan). Shokuhin Eiseigaku Zasshi, 32(2), 98-103 (Japanese) 1991. CODEN: SKEZAP. ISSN: 0015-6426.

AB Metolachlor (I) in a crop sample was extracted with Me₂CO, cleaned up with aqueous NH₄Cl-H₃PO₄, a bilayer column of silica gel and **hydrated** Florisil, and a Sep-Pak C18 cartridge, and quantitated by gas chromatog. with electron-capture detection. I from **cereal** samples required hexane-MeCN partitioning after extraction, whereas I from radishes and sweet potatoes required only the bilayer chromatog. for clean up. The detection limit was 0.005 ppm, and recoveries were 87.0-94.8%. I was detected in none of 30 crop samples examined

L9 ANSWER 36 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1991:553438 Document No. 115:153438 Calorimetric study on the interactions of 5-n-heptadec(en)ylresorcinols from **cereal** grains with zwitterionic phospholipid (DPPC). Hendrich, Andrzej B.; Kozubek, Arkadiusz (Dep. Biophys., Acad. Med., Wroclaw, 50-368, Pol.). Zeitschrift fuer Naturforschung, C: Journal of Biosciences, 46(5-6), 423-7 (English) 1991. CODEN: ZNCBDA. ISSN: 0341-0382.

AB The effect of two 5-n-alk(en)ylresorcinol (17:1 and 17:0) homologs at the concns. of 5-20% on the thermotropic properties of dipalmitoylphosphatidylcholine in **hydrated** bilayers has been studied. The effect is different, depending on unsatn. of the aliphatic chain of resorcinol derivative Saturated homolog (5-20 mol%) induces disappearance of the pretransition, increase of the main transition temperature and a half-width of the transition peak. Unsatd. homolog shifts pretransition towards higher temps., and similarity to the saturated one increases transition half-width but decreases the transition temperature, decreases the transition heat content and induces some phase separation

L9 ANSWER 37 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1991:225787 Document No. 114:225787 Molecular cloning and expression of abscisic acid-responsive genes in embryos of dormant wheat seeds. Morris, Craig F.; Anderberg, Robert J.; Goldmark, Peter J.; Walker-Simmons, Mary K. (U. S. Dep. Agric., Pullman, WA, 99164-6420, USA). Plant Physiology, 95(3), 814-21 (English) 1991. CODEN: PLPHAY. ISSN: 0032-0889.

AB **Hydrated** dormant **cereal** seeds do not germinate even when environmental conditions are favorable for germination. By using cDNA cloning and differential screening, mRNAs from 5 gene families that are abundant in the embryos of imbibed, but developmentally arrested wheat (*Triticum aestivum*) seeds were identified. Gene transcript levels of

these mRNAs are maintained and even increase in embryos of imbibed dormant seeds for as long as the seeds remain dormant. In contrast, transcript levels decline in nondormant seeds after imbibition and disappear as germination occurs. All the identified genes are abscisic acid (ABA) responsive. Thus, wheat seeds in the **hydrated** dormant state apparently exhibit prolonged expression of ABA-responsive genes.

L9 ANSWER 38 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1990:240510 Document No. 112:240510 Anti-inflammatory skin composition containing corticosteroids. Geria, Navin Manohar (Warner-Lambert Co., USA). Eur. Pat. Appl. EP 336902 A2 19891011, 10 pp. DESIGNATED STATES: R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1989-810245 19890403. PRIORITY: US 1988-176898 19880404.

AB A medicated skin care composition comprises (1) an oil phase comprising .apprx.30-80% oil and .apprx.5-9% a nonionic surface active agent with an hydrophilic-lipophilic balance number of .apprx.1-12; (2) an aqueous phase comprising .apprx.0.05--5% a thickening agent and .apprx.15-60% water, and (3) an effective amount of a corticosterone. The composition makes a smooth creamy emulsion and is phys. stable. An emulsion contained hydrocortisone acetate 1.05, water 20.50, methylparaben 0.20, propylparaben 0.10, imidazolidinyl urea 0.30, Carbomer 940 0.15, NaOH 0.10, polyoxyethylene(2) stearyl ether 3.00, mineral oil 70, polypropylene glycol 5-ceteth 0.10, polyoxyethylene(20) stearyl ether 4, and fragrance 0.5%.

L9 ANSWER 39 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1990:240302 Document No. 112:240302 Skin cleansing and moisturizing composition containing an abrasive. Geria, Navin Manohar (Warner-Lambert Co., USA). Eur. Pat. Appl. EP 336900 A2 19891011, 10 pp. DESIGNATED STATES: R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1989-810243 19890403. PRIORITY: US 1988-176907 19880404.

AB A skin cleansing and moisturizing composition comprises (1) an oil phase comprising .apprx.30-80% oil and .apprx.5-9% a nonionic surface active agent with an hydrophilic-lipophilic balance number of .apprx.7-12, (2) an aqueous phase comprising .apprx.0.05-5% a thickening agent and .apprx.15-65% water, and (3) an effective amount of an abrasive to remove oily deposits, cosmetics and particulates from the skin surface. The composition contained polyethylene particulate 5, water 16.55, methylparaben 0.20, propylparaben 0.10, imidazolidinyl urea 0.30 Carbomer 940 0.15, NaOH 0.10, polyoxyethylene stearyl ether 3.00, mineral oil 70, polypropylene glycol 5-ceteth 0.10, polyoxyethylene stearyl ether 4, and fragrance 0.5%.

L9 ANSWER 40 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1989:532862 Document No. 111:132862 High-fiber, noncaloric flour substitute for baked foods. Properties of alkaline peroxide-treated lignocellulose. Gould, J. Michael; Jasberg, Brian K.; Dexter, Lee B.; Hsu, J. T.; Lewis, S. M.; Fahey, G. C., Jr. (North. Reg. Res. Cent., Agric. Res. Serv., Peoria, IL, 61604, USA). Cereal Chemistry, 66(3), 201-5 (English) 1989. CODEN: CECHAF. ISSN: 0009-0352.

AB Treatment of lignocellulosic materials such as wheat straw, corn stalks, **cereal** brans, or vegetable and fruit pulps with an alkaline (pH 11.5) solution of H₂O₂ dramatically increased their ability to absorb water, soften, and swell when **hydrated**. Substitution of alkaline H₂O₂ treated lignocellulose for corn starch-dextrose mixts. in the diets of nonruminant animals (rats, chicks) reduced the digestibility of the diets without increasing the amount of feed consumed. As a result, the rate and efficiency of weight gain were reduced for animals consuming diets containing treated lignocellulose. The low digestibility of alkaline peroxide-treated lignocellulose by nonruminants, in conjunction with its enhanced phys. properties compared with other cellulosic ingredients for baked foods, suggests that this material may be useful as an ingredient for reducing caloric d. and or increasing the dietary fiber content of baked products.

L9 ANSWER 41 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1989:512262 Document No. 111:112262 Synthetic substrate for filamentous fungi. Romaine, C. Peter; Nelsen, Charles E.; Davis, Roxanne (Plant Genetics, Inc., USA). U.S. US 4803800 A 19890214, 19 pp. (English). CODEN: USXXAM. APPLICATION: US 1987-31512 19870327.

AB A process for cultivating filamentous fungi comprises providing a synthetic substrate consisting of a **hydrated** hydrogel matrix forming a capsule which contains a nutrient capable of sustaining growth of the fungi, and inoculating the surface of the capsule with the fungi. A process for cultivating mushrooms comprises dispersing these inoculated capsules in a medium which permits these fungi to produce mushrooms. The dispersed, inoculated capsules can be used as a synthetic compost-at-casing agent. Thus, capsules containing ground brewer's grain and soy grits prepared from Na alginate and vermiculite were used as substrate for growth of *Agaricus bisporus*, as well as *Aspergillus niger*, *Penicillium*, *Rhizopus stolonifer*, etc.

L9 ANSWER 42 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1986:67807 Document No. 104:67807 The effect of fluidized bed combustion residue on the composition and nutritional quality of food crops for hamsters and rats. Fashandi, E. F.; Reid, R. L.; Stout, W. L.; Hern, J. L.; Bennett, O. L. (Div. Anim. Vet. Sci., West Virginia Univ., Morgantown, WV, USA). *Qualitas Plantarum - Plant Foods for Human Nutrition*, 35(4), 359-74 (English) 1985. CODEN: QLPLAN. ISSN: 0377-3205.

AB Food crops (corn, oats, soybeans, vegetables) were grown on soils treated with fluidized bed combustion residue (FBCR) or **hydrated** lime. The composition of the foods and their nutritional quality were evaluated in growth, balance and carcass composition studies with growing hamsters and rats. Application of FBCR had little effect on elemental concns. of dietary components. Weight gains in hamsters over a 6 wk period were higher on FBCR than on lime-treated corn diets, but there were no differences due to FBCR in gains of hamsters on the oats diets or in rats on either of the **cereal** based diets. Apparent retention of N, Ca, P, S, and Mg was determined by balance and by carcass anal. Differences in mineral retention between FBCR and lime treatments were generally small and inconsistent. Anal. of the whole body of hamsters showed lower concns. of N, P, Zn, and Cu with FBCR compared to lime-treated corn diets; little difference in body composition was found in the rat. There was no accumulation of heavy metals in liver, kidney, bone, serum or hair (of rats only) and no differences in concns. of elements in organs due to application of FBCR to soils on which the dietary components had been grown.

L9 ANSWER 43 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1982:422323 Document No. 97:22323 Effect of grist-pressing temperature on the quality of phospholipid concentrates. Palaveeva, Ts.; Gurdev, M. (Bulg.). *Maslo-Sapunena Promishlenost*, 17(4), 1-8 (Bulgarian) 1981. CODEN: MSBYAV. ISSN: 0369-190X.

AB Pressing grist at 105, 110, 115, 120, or 125° gave crude oil containing 0.72, 0.85, 0.90, 0.92, and 0.95% phospholipids, resp. **Hydrated** oil contained 0.20, 0.25, 0.30, 0.34, and 0.38% phospholipids, resp., and the nonhydratable portion of oil made up 28, 30, 33, 37, and 40% of the oil, resp. Acid number of the oil was 0.90, 0.90, 0.93, 1.01, and 1.05, resp., and that of isolated phospholipid concentrate was 16, 16, 16, 17, and

17,

resp. Increasing the heating temperature from 90 to 135° increased the content of brown pigments in the refined and crude oil and the phospholipid concentrate. Carotenoids disappeared, whereas browning products appeared in samples heated at >110° for >10 min. Pressing added .apprx.120 ppm Fe to the phospholipids. Addition of graded amts. of Fe to phospholipids linearly intensified the brown color.

L9 ANSWER 44 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

- 1980:493861 Document No. 93:93861 Method of preparing refined starch hydrolysates mainly consisting of monosaccharides, disaccharides, and higher saccharides from starch-containing cereals. Bos, Cornelis; Anderson, Ekri; Schwengers, Dieter (DDS-Kroeyer A/S, Den.; Pfeifer und Langen K.-G.). Brit. GB 1561856 19800305, 7 pp. (English). CODEN: BRXXAA. APPLICATION: GB 1977-2767 19770124.
- AB Starch [9005-25-8] hydrolyzates comprising mainly mono- and disaccharides and higher saccharides were prepared from starch-containing cereals such as wheat, barley, and rye. The **cereal** kernels were softened and **hydrated** for 5-15 h in water at 40-60°. Gentle wet-milling of the kernels produced a starch-containing fraction essentially free of insol. pentosans attached to the fibers. The starch-containing fraction was washed and subsequently hydrolyzed, and the resulting hydrolyzate refined.
- L9 ANSWER 45 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
- 1980:444405 Document No. 93:44405 Dehydrated food preparation with alginate. (Unilever N. V., Neth.). Jpn. Kokai Tokkyo Koho JP 55039799 19800319 Showa, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1979-115088 19790907.
- AB An alginate gel containing homogenized food materials is cut into pieces of a desired shape and dried. The product is a instant food having high rehydration rate and a natural mouth feel. Thus, a composition containing Na alginate [9005-38-3] 1, Na₂HPO₄.12H₂O 0.2, **cereal** flour 1.8, Na glutamate 1, antioxidant 0.03, ground chicken 40, CaSO₄.2H₂O 0.45, and water 19.55% was gelatinized, cut into cubes (0.8 cm edge), and dried at 70° for 3 h to 8.1% moisture. When the product was boiled, it **rehydrated** in 2 min and had a fibrous texture similar to chicken.
- L9 ANSWER 46 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
- 1978:474401 Document No. 89:74401 Potential use of sorghum grains in pasta processing. Miche, J. C.; Alary, R.; Jeanjean, M. F.; Abecassis, J. (Inst. Rech. Agron. Trop., Montpellier, Fr.). Proc. Symp. Sorghum Millets Hum. Food, Meeting Date 1976, 27-35. Editor(s): Dendy, D. A. V. Trop. Prod. Inst.: London, Engl. (English) 1977. CODEN: 38LTA7.
- AB Four sorghum varieties were used to study pasta manufacture from composite flours. Semolina and flours used for this study were obtained by classical dry milling on 3 break rolls and 2 reduction rolls with extraction rates of 65-75%. Pasta was made on laboratory and pilot scale with purified semolina (extraction 45-55%). Several methods were investigated. Complete gelatinization of sorghum semolina before or during extrusion through a die following drying gave pasta with very bad cooking qualities. Similarly, pasta obtained by a very intensive lamination of the **hydrated** dough had no firmness and no cohesiveness after a few min cooking. Addition of surface-active agents or wetting agents to the dough did not improve the cooking quality. A blend of durum wheat semolina and raw sorghum semolina gave acceptable pasta products up to a ratio of 1:1. This best way to obtain products of good cooking quality is to add some gelatinized starch [9005-25-8] to the sorghum flour before extrusion. Quality of pasta is influenced by sorghum variety, particle size of semolina, nature, viscosity, and parity of the starch used. Finally, **cereal** starches and flours gave better results than root starches. The best results were obtained with modified corn starch having a high viscosity and a low aqueous solubility
- L9 ANSWER 47 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
- 1975:71835 Document No. 82:71835 Low calorie pasta. Wren, Martha A.; Mullen, Joseph D. (General Mills, Inc.). U.S. US 3843818 19741022, 3 pp. (English). CODEN: USXXAM. APPLICATION: US 1972-314657 19721213.
- AB A low cal pasta was prepared by mixing 15-50 parts polygalactomannan gum and 50-80 parts of a mixture of vegetable protein and **cereal**, adjusting the moisture content to 28-38% by weight, working in an extruder while raising the temperature to 55-98° and extruding to form a pasta.

Thus, 175 parts guar flour, 175 parts durum wheat, 150 parts vital gluten, 0.5 parts TiO₂, and 0.2 part FD and C Yellow Number 5 were dry blended and 255 ml of 2% HOAc added dropwise. The **hydrated** material was then treated in an extruder having a 20:1 ratio of length to diameter and 4:1 compression. The temperature in the extruder barrel was 50° in the feed zone and 90° in the remainder. The material was extruded at a temperature of 85°, cut, and dried. When cooked in boiling water for 10 min., the product had the texture and flavor of conventional pasta.

L9 ANSWER 48 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1974:559878 Document No. 81:159878 Aqueous solutions. Measurement of activity. VI. General problem of bound water. Duclaux, Jacques; Cohn, Charlotte (Inst. Biol. Phys. Chim., Paris, Fr.). Journal de Chimie Physique et de Physico-Chimie Biologique, 71(7-8), 1092-6 (French) 1974. CODEN: JCPBAN. ISSN: 0021-7689.

AB A H₂O activity measurement technique in **hydrated** mixts.

(Duclaux, J.; Cohn, C., 1973) was applied to concentrated, saturated, and supersatd.

solns., to salt hydrates, inorg. and organic macromols., porous materials, and organism in a state of latent life. The method was easy to use and gave new data such as the possible use of a hemicolloidal solution as a practically perfect desiccating agent. It also showed the remarkable resistance to desiccation of biol. materials such as seeds. The extension of this research would make it possible to deal in a new way with the general problem of bound water in living matter.

L9 ANSWER 49 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1974:44691 Document No. 80:44691 Extermination of powdery mildew. Nishiyama, Ryuzo; Ichihashi, Masayuki; Fujikawa, Kanichi; Mori, Hiroyuki (Ishihara Mining and Chemical Co., Ltd.). Jpn. Tokkyo Koho JP 48007332 B4 19730305 Showa, 2 pp. (Japanese). CODEN: JAXXAD. APPLICATION: JP 1970-29384 19700408.

AB Powdery mildew was exterminated by the application of o-methylpropionanilide (I) [19343-15-8] to plant leaves or stems. I can be used for both curative and preventive purposes and may be used in the form of a dust, emulsion or **hydrated** preparation. The prepn may be applied to **cereal** plants, bean plants, vegetables, flowers or fruit trees. The effective concns. ranged from 200 to 2000 ppm. Thus, I (20 parts), isophorone [78-59-1] (70 parts) and polyoxyethyleneglycol [25322-68-3] (10 parts) were mixed. A concentration of 200 g/100 ml was effective for controlling powdery mildew in cucumber plants.

L9 ANSWER 50 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1973:134709 Document No. 78:134709 Separating **cereal** meal into protein and starch. Moneymaker, John Robert; Forsythe, Curtis Jack (Top-Scor Products, Inc.). Ger. Offen. DE 2214495 19730208, 67 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1972-2214495 19720324.

AB Wheat flour (insol. protein 9.80, soluble protein 1.50%) 600 g was **hydrated** by mixing with a slowly added aqueous solution of poly(oxyethylene) (20) monodiglyceride 12 g in H₂O 900 g. The thin dough was further mixed at 35° for .apprx.10 min into a fibrous coherent mass. After addition of 900 ml H₂O of 35° low speed stirring was continued until the gluten in the form of a fibrous coherent mass with a very open netlike structure was completely separated from the starch suspension, which was drained. The gluten was washed with 900 ml H₂O and dried to a modified gluten product of improved baking properties (protein content 86.7%; yield 88.4% based on total protein and 100.5% based on insol. protein. In 22 examples other poly(oxyalkylated) nonionic compds. were used with hard and soft wheat flour, and the gluten products were tested.

L9 ANSWER 51 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1972:125627 Document No. 76:125627 Instant oat **cereal** product.

Ronai, Kenneth S.; Spanier, Henry C. (Nabisco, Inc.). U.S. US 3640729
19720208, 4 pp. (English). CODEN: USXXAM. APPLICATION: US 1969-823156
19690508.

AB An instant oat **cereal** product requiring no cooking was prepared from processed oats and an edible **cereal** hydrolyzate texturizing agent with a dextrose equivalent. The process consists of toasting oat groats at 225-315°F for 4-120 min with subsequent cooling to below 150°F. The oat groats are then pearled, cut, and sifted. They are **hydrated** to a moisture content of 9-12% and tempered at 65-85°F for 30-90 min, followed by flaking and drying to a moisture content of 7-13%. An edible **cereal** hydrolyzate texturizing agent (5% by weight) with 6-12% Dextrose Equivalent is added. The **cereal** is made ready to eat by adding hot or boiling water with no cooking required.

L9 ANSWER 52 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1970:508495 Document No. 73:108495 Quick-cooking **cereal** grains.
Rockland, Louis B. (United States Dept. of Agriculture). U.S. US 3526511
19700901, 4 pp. (English). CODEN: USXXAM. APPLICATION: US 1967-683464
19671116.

AB Quick cooking **cereal** grains are prepared by impregnating the grains with an aqueous hydration solution, at alkaline pH, containing 1-3% NaCl and

0.1-5% of a chelating agent, for a time sufficient to increase the moisture content of the grains to 40-65%. The **hydrated** grains may be dried with air at 140-160°F or may be preserved by freezing or by partial dehydration followed by holding at refrigerator temperature

Thus, different **cereal** grains were treated with pH 9 solns. containing: NaCl 2.5; Na tripolyphosphate 1.0; NaHCO₃ 0.75; Na₂CO₃ 0.25; Na₄ EDTA 0.5; and H₂O 95.0%. The grain was placed in a vessel with .apprx.3 times its weight of solution. The vessel was put under vacuum which was maintained for 5 min and then released; after 5 min the vacuum was reapplied. Following a series of vacuum treatments, the grain was allowed to stand in the hydrating solution for variable times. After hydration, the grain products were dried in a current of air at 130-140°F until the moisture content was 10%. The kernels retained their structure intact with no noticeable cracking or splitting. The treated grains had a shorter cooking time and better flavor than the untreated grain. Wheat, rye, oats, and barley were treated by varying the number of cycles of vacuum treatment, the temperature of the vacuum treatment, and the temperature and time of soaking.

L9 ANSWER 53 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1969:38018 Document No. 70:38018 Structure of phytic acids. Johnson, LeRoy Franklin; Tate, M. E. (Spectrosc. Appl. Lab., Varian Assoc., Palo Alto, CA, USA). Canadian Journal of Chemistry, 47(1), 63-73 (English) 1969.
CODEN: CJCHAG. ISSN: 0008-4042.

AB Evidence is presented to show that **cereal** grain phytic acid has the myo-inositol hexakis(orthophosphate) structure suggested by Anderson (1914) and not the **hydrated** myo-inositol tripyrophosphate structure proposed by Neuberg (1908). DL-myo-Inositol 1,6:2,3:4,5-tripolyphosphate, which is structurally related to the Neuberg formulation, prepared. The "phytic acid" fraction from chicken blood was shown to be predominantly 1,3,4,5,6-myo-inositol pentaphosphate. The structures assigned to these compounds were confirmed by 31P N.M.R.

L9 ANSWER 54 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1967:420799 Document No. 67:20799 Breakfast **cereal** process.
Clausi, Adolph S.; Vollink, Willard L.; Michael, Elmer W. (General Foods Corp.). U.S. US 3318705 19670509, 4 pp. (English). CODEN: USXXAM.
APPLICATION: US 19640217.

AB Ready-to-eat breakfast cereals are prepared by gelatinizing **hydrated**, ungelatinized **cereal** dough pieces. The major portion of the pieces (up to 85%) is a nutritious **cereal** flour (soy flour) and a minor portion is 1.5-10% milk protein. The moisture content is 22-33% at the gelatinizing temperature of 215°-265°F. with steam pressures at 1-23 psig. The gelatinized pieces are cooled to .apprx.150°-205°F., pelletized, and partially dried to 5-21% moisture. The dough pieces are shaped into flakes which are dried to 1-3.5% moisture at less than 250°F. Thus, **cereal** pieces were prepared containing oat flour 60-70, rice flour 7-12, soy flour 5-10, sucrose 5-15, lecithin 0.05-0.15, salt 2-4, and milk casein 1.5-10.0% by weight. The dry ingredients were mixed and water was added to a moisture content of 27-29%. The mass was mixed until all the dry material formed agglomerates. The agglomerates were placed in a jacketed cooking vessel having an agitator. The mass was cooked and agitated at 250°F. and a pressure of 15 psig. for 8 min.; at this time the farinaceous materials were thoroughly gelatinized. The agglomerates were put through an extruder capable of producing pellets having a diameter of 3/16 in. and a length of 1/4 in. As it passed through the extruder, the dough material was cooled to 200°-205°F. The pellets were dried to 20% moisture on a traveling screen drier which had circulating air at 250°-350°F. The dried pellets were introduced to flaking rolls having a spacing of 0.01-0.05 in. to produce **cereal** flakes. The flakes were dried to a moisture content of 1-3.5% by a moving screen drier having an air temperature of 250°-350°F. The temperature of the product did not exceed 250°F.

L9 ANSWER 55 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1961:61755 Document No. 55:61755 Original Reference No. 55:11794e-g
Sintered shapes of vitreous silica. Kadisch, Gerhard E.; Jakubczak, Arthur US 2973278 19610228 (Unavailable). APPLICATION: US .

AB Articles, such as tubes, insulators, crucibles, and linings, composed chiefly of finely divided fused SiO₂ are sintered to hard, dense bodies without devitrification if the SiO₂ powder is mixed with 1.2-≥ 15% by weight boric oxide. The sintering is performed in an enclosure, such as a tight sagger or packed sand so that a protective atmospheric is maintained around the articles. Binders, such as H₂O, other inert liquids, wax, starch, bentonite, and **cereal** flour, may also be used. The sintering temperature may be 2450°F. for maximum d., or 1900-2100° otherwise. Translucent bodies having the same properties as fused SiO₂ are produced. Thus, a suitable mixture contained pure, vitreous SiO₂ (<3 μ) 95, **hydrated** boric oxide (containing 40% H₂O) 5, bentonite 4-6, and H₂O 14-16 parts by weight. This was molded, dried at 140-50°F., machined to accurate size, and fired in a tight sagger at 2450°F. for 30 min. The sintering atmospheric may be N or BF₃ vapor.

L9 ANSWER 56 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN
1953:14270 Document No. 47:14270 Original Reference No. 47:2487a-b,2488a-b
Shock-resistant shotgun-shell wads. Lathrop, Elbert C.; Naffziger, Theodore R. (United States of America, as represented by Secy. of Agr.). US 2603156 19520715 (Unavailable). APPLICATION: US .

AB Comps. suitable for use as shotgun shell wads are prepared by intimately mixing fibers obtained from plants possessing little or no pith (such as **cereal** straw and certain grasses) with **hydrated** fibers from the same plants. Thus, 70 lbs. wheat straw, cut to 0.75-1.25 in. lengths, was digested with 490 lbs. H₂O for 1.25 hrs. at 40 lbs. gage pressure, the straw removed, washed with cold water, and run through a pulper fitted with grid plates having a clearance of 0.018-0.030 in., and mixed with varying proportions of beaten **hydrated** strawboard pulp (prepared by cooking whole straw with 6% Ca(OH)₂ and 1.5% NaOH for 5 hrs. at 140°). The mixts. were formed into boards and dried. Boards formed from mixts. containing 25-35% **hydrated** straw did not

form "confetti" when used as wads.

L9 ANSWER 57 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1952:39828 Document No. 46:39828 Original Reference No. 46:6762e-h

Gastrointestinal absorption of ions. I. Agent diminishing absorption of strontium. MacDonald, Norman S.; Nusbaum, Ralph E.; Ezmirlian, Florita; Barbera, Richard C.; Alexander, Geo. V.; Spain, Patricia; Rounds, Donald E. (Univ. of California, Los Angeles). Journal of Pharmacology and Experimental Therapeutics, 104, 348-53 (Unavailable) 1952. CODEN: JPETAB. ISSN: 0022-3565.

AB cf. C.A. 45, 5283d. Thirty-two substances readily available in large quantities were screened for ability to diminish skeletal deposition of ingested Sr. SrCl_2 solution was given to fasted rats by stomach tube and followed immediately by an aqueous solution or suspension of the substance. After 24 hrs., Sr in the femurs was determined spectrographically. Substances decreasing skeletal deposition of Sr are, in decreasing order of efficacy: MgSO_4 , Na_2SO_4 , the NH_4 salt of an amido polyphosphate (Victamide), 2 carboxylic type cation-exchange resins, a colloidal phosphorylated glucoside, Ca phytate, pectin, a prepared bran **cereal**, castor oil, and a hydrophilic gum from plantago seed. The following had little or no influence: bentonite, kaolin, **hydrated** alumina, soluble starch, methylcellulose, carboxymethylcellulose, agar, gum acacia, crude lignified cellulose, gelatin, fresh egg white, oatmeal, phenolphthalein, mineral oil, and the disodium salt of ethylenediaminetetraacetic acid. Powdered milk, tannic acid, inulin, Na alginate, and a carboxylic and sulfuric acid-substituted starch (Nufilm) all increased skeletal accumulation of ingested Sr.

L9 ANSWER 58 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1947:38124 Document No. 41:38124 Original Reference No. 41:7544c-g Chemical estimation of nicotinic acid in cereals and other foods. James, Eirene M.; Norris, F. W.; Wokes, Frank (Ovaltine Labs., King's Langley, Herts, UK). Analyst, 72, 327-36 (Unavailable) 1947.

AB As a result of considerable study, the following chemical method has been devised which gives satisfactory reproducibility and agreement with microbiol. assays in the analysis of cereals. Higher results, however, were obtained with low-extraction flours and some yeast preps.; this may be due to nicotinic acid precursors. Mix 1 g. of sample (up to 150 γ nicotinic acid) with 5 ml. of concentrated HCl and water to make 15 ml. Heat

in a boiling water bath for 40 min. Cool to room temperature and centrifuge (A). Decant the supernatant liquid, add to it 2.5 g. of Lloyd's reagent (**hydrated** Al silicate), shake 1 min., and centrifuge (B). Reject the supernatant liquid. Wash the residue from A with 10 ml. of 0.2 N H_2SO_4 and centrifuge. Add the supernatant liquid from this treatment to the residue from B. Shake 1 min., centrifuge, and reject the liquid. Add to the residue 10 ml. of 0.1 N NaOH, and more if necessary to make basic to phenolphthalein. Shake well for 1 min., dispel foam with 1 drop of EtOH, and make up to 16.5 ml. Centrifuge, decant, and reject the residue. To the final liquid, add finely powdered $\text{Pb}(\text{NO}_3)_2$ to bring the pH to 8.0-9.0 (thymol blue as outside indicator). Centrifuge and add 1 drop phenolphthalein indicator to the liquid. If no pink color is obtained, add enough Na_3PO_4 to give the color. Take 5 ml. of the liquid, add 1 drop of 20% H_3PO_4 and then just enough Na_3PO_4 to bring the pH to about 6.5 (bromothymol blue as outside indicator). Make up to 25 ml. (= final extract). To 5 ml. of the final extract, and to corresponding standards, add 2 ml. of fresh CNBr reagent, heat at 56-58° for 4 min., cool to 20° for 5 min. and then add 1 ml. of a 10% solution of p-aminoacetophenone (or procaine) and 1 ml. of 6% w./v. HCl. After 5 min. measure the optical d. in the Spekker photoelec. absorptiometer.

L9 ANSWER 59 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1947:7200 Document No. 41:7200 Original Reference No. 41:1477e-g, 1478a The

effect of various factors on the swelling of certain **cereal** starches. Harris, R. H.; Jespersen, Ethel (North Dakota Agr. Expt. Sta., Fargo). Journal of Colloid Science, 1, 479-93 (Unavailable) 1946. CODEN: JCSCA7. ISSN: 0095-8522.

AB cf. C.A. 40, 6857.7. The swelling power of millet, barley, wheat, rye, and corn starches was measured by determining the change in volume of the starch

granules on heating with water. Three methods of determining this change were used: (1) reading the volume of **hydrated** starch of known dry weight; (2) measuring the increase in weight of a centrifuge tube after starch gelatinization; (3) measuring the loss in weight of swollen granules on drying. The 3 methods agreed very well (correlation coeffs. over 0.98). Method (3) was the most convenient experimentally. A statistical analysis of the variance of swelling power data for starches from different cereals swollen at different concns. and temps. by different methods showed highly significant variations in every case. Treatment with 0.5% aqueous NaOH at 5° markedly increased swelling power. The addition of 0.001 N $Al_2(SO_4)_3$ decreased the swelling power of starch treated with NaOH but was without effect on starch prepared with water.

L9 ANSWER 60 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1940:38308 Document No. 34:38308 Original Reference No. 34:5782b-e Effect of ferric sulfate in shortening Kjeldahl digestion. Stubblefield, F. M.; DeTurk, E. E. Industrial and Engineering Chemistry, Analytical Edition, 12, 396-9 (Unavailable) 1940. CODEN: IENAAD. ISSN: 0096-4484.

AB A study of the literature and laboratory tests failed to reveal any practical means for shortening the Kjeldahl digestion in the determination of N in alfalfa,

cereal products, vegetables and milk, based on raising the b. p., with oxidants or with catalysts. A method is proposed which provides more surface for the oxidizing activity and for the formation of gas bubbles, without producing noxious fumes and with no increase in the number of steps in the procedure. For the digestion, the following mixture is recommended: 10 g. K_2HPO_4 or 12 g. of the **hydrated** salt, 6 g. of $Fe_2(SO_4)_3$, 25 ml. of concentrated H_2SO_4 and 0.6 g. of Hg. The results agreed with those obtained by the official Kjeldahl-Gunning-Arnold method but the time required was reduced from 2.5 hrs. to 30 min. The use of K_2HPO_4 prevents bumping. The $Fe_2(SO_4)_3$ is insol. in the H_2SO_4 and must be insol. to carry out the basic principle of the method. Elec. heaters are suitable but after the first few min. the full heat of a gas burner can be used to advantage because a strong heat over a wide surface of the flask greatly shortens the digestion time.

L9 ANSWER 61 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1938:30895 Document No. 32:30895 Original Reference No. 32:4268a-d Rhizoctonia root rot of wheat and oats. Hynes, H. J. Dept. Agr., N. S. Wales, Sci. Bull., No. 58, 42 pp. (Unavailable) 1937.

AB Growth of Rhizoctonia solani on glucose and radicicola agars was retarded by the addition of 0.25-0.50% $(NH_4)_2SO_4$. In pot expts. with infected wheat seedlings grown in naturally infested soil, a single application of $(NH_4)_2SO_4$ had a very beneficial effect on the control of the disease in 2 successive crops but not in the 3rd crop. Manure (horse) was of benefit only during the 1st yr. of growth. **Hydrated** lime had no beneficial effect during the 1st yr. after it was applied to the soil, but it inhibited the development of the disease in the 2nd and 3rd yr. When wheat and oat seedlings were grown in a sterilized soil that had been inoculated with a **cereal** isolate of R. solani, better control of root rot was obtained by applying the $(NH_4)_2SO_4$ at the time of seeding than by applying it 2 weeks later. In field expts. over a period of 3 yr., application of $(NH_4)_2SO_4$ to the soil minimized the damage from root rot, particularly in the case of oats. $KMnO_4$ and the sulfates of Mg, NH_4 , Mn, Fe^{++} and K gave no control of the disease under greenhouse conditions.

L9 ANSWER 62 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1933:5261 Document No. 27:5261 Original Reference No. 27:557i,558a-c
Cellulose fermentation. Langwell, H. Chemistry & Industry (London,
United Kingdom), 51, 988-94 (Unavailable) 1932. CODEN: CHINAG. ISSN:
0009-3068.

AB A brief historical survey of the development of cellulose fermentation
since Omeliansky with special reference to L.'s own work during the past
15 years, at Great Burgh (research laboratory of the Distiller's Co.).
Fermentation of corncobs, in 180-l. batches of culture medium, was carried
out at 60°, during 7 days, in Al fermenters, with external water
jackets. Metallic iron (originally present in pipes of the stirring gear)
inhibited fermentation and was abandoned. For detailed exptl. data
(apparently published for the first time) on the disintegration of the raw
material, stirring, inoculation, nutrients (which include KCl or K₂SO₄,
superphosphate or com. Na₂HPO₄.12H₂O, and NH₄Cl or (NH₄)₂SO₄), variation
in cultures, pH of media, neutralizing agents (of which CaCO₃ shows an
inhibiting effect), concns. of cellulose, etc., the original paper should
be consulted. The total yields of useful products in different
fermentations are compared by calculating the "net cellulose equivalent" (C.
E.) if

it is assumed that 180 g. AcOH, 88 g. PrCO₂H, 92 g. EtOH or 37.2 cc. CH₄
are the equivs. of 162 g. cellulose. The following comparative data were
obtained with "standard cultures," "aerated cultures" and "vacuum
cultures," resp.: 31.6, 25.2 and 29.7% AcOH; 1.0, 1.1 and 1.6% PrCO₂H;
3.2, 7.1 and 3.0% EtOH; and 36, 36.9 and 35.3 "net C.E." A 60,000-gallon
fermenter. equipped with Kestner "Vortex" stirrer, capable of fermenting 2
tons of beet pulp per diem was operated successfully at Petersborough
during 1929-30. Large-scale operations were also made at Terre-Haute (U.
S. A.). Besides corncobs and beet pulp, "pure" celluloses,
hydrated- and hydrocelluloses, and hemicelluloses and other
polysaccharides may be used as raw materials. **Cereal** straws are
partially fermentable. Wood and bamboo, unless chemically pretreated,
cannot be fermented.

L9 ANSWER 63 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1932:58592 Document No. 26:58592 Original Reference No. 26:6025i,6026a-b
The gums of the **cereal** grains. Freeman, Monroe E.; Gortner,
Ross A. Cereal Chemistry, 9, 506-18 (Unavailable) 1932. CODEN: CECHAF.
ISSN: 0009-0352.

AB Gums similar to the wheat gum described by Hoffman and Gortner can be
prepared from durum, rye and barley flours. This method has been simplified
by extracting the flour with half saturated (NH₄)₂SO₄ solution The gums
contain no
hexoses or hexose uronic acids. Analysis indicates that the gums are
largely pentose polymers admixed with some protein material. The rate of
hydrolysis in hot dilute H₂SO₄ is typical of pentose-polymers of this type.
Evidence indicates that the pentose sugars formed by hydrolysis of the
gums are mixts. of xylose and arabinose except in durum gum 1930, which
seems to be a pure xylan. The N present is in the form of protein,
probably adsorbed or closely associated with the gum. The gums differ from
the hemicelluloses prepared by Larmour (1927) which contain large quantities
of hexose sugars and at the most small quantities of pentose sugars. These
pentose gums form typical colloidal sols with highly **hydrated**
micelles. Viscometric data indicate that each g. of the gum in the sol
state occupies about 9 cc. volume, accordingly in the sol state the gum is
hydrated to the extent of at least 800%.

L9 ANSWER 64 OF 64 CAPLUS COPYRIGHT 2004 ACS on STN

1930:7916 Document No. 24:7916 Original Reference No. 24:900h-i Extracts
from bran and **cereal** germs, etc.. Lahmann, H. H. (Lahmann's
Sanatorium Weisser Hirsch). GB 311424 19280512 (Unavailable).
APPLICATION: GB .

AB Bran or the germ of various cereals or legumes is used for preparing

nitrogenous products or exts. by soaking in 4-5 times their quantity of distilled water at 55-65° for 6 hrs. while stirring, adding barley malt, while excluding the air for the most part, lixiviating and separating the liquor. Bitter substances such as volatile fatty acids may be removed from the **hydrated** extract by distillation with steam. The exts. may be added to foods such as bread, chocolate or cocoa or to pharmaceutical prepsns.

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COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
187.54	404.18

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION
-47.82	-47.82

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